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THE PSYCHIATRIC QUARTERLY

(SUCCESSOR TO THE STATE HOSPITAL QUARTERLY)

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A Clinical Classification of Mental Deficiency

Brain Tumors—Part III

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Governor Marcy and the Utica State Hospital

The Bond Issue for State Institutions

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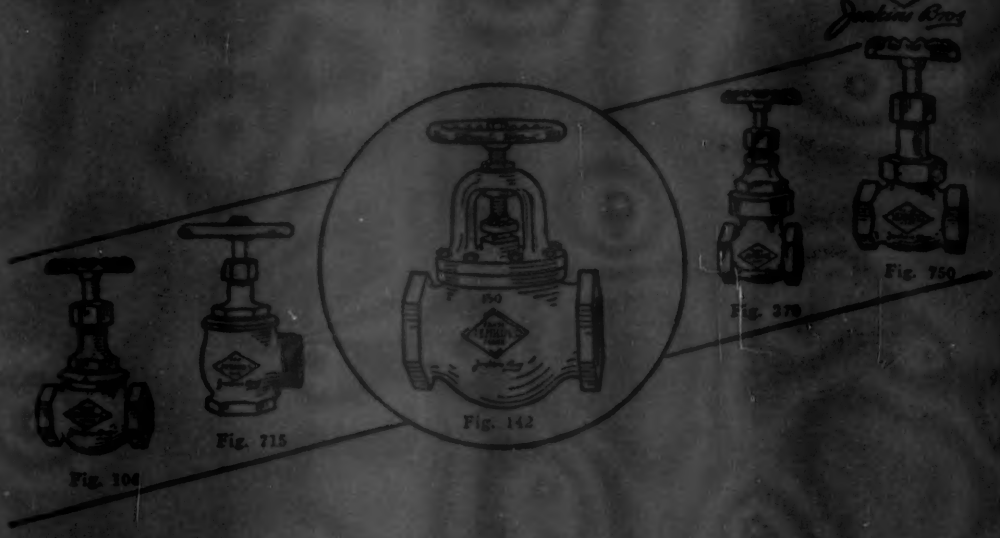

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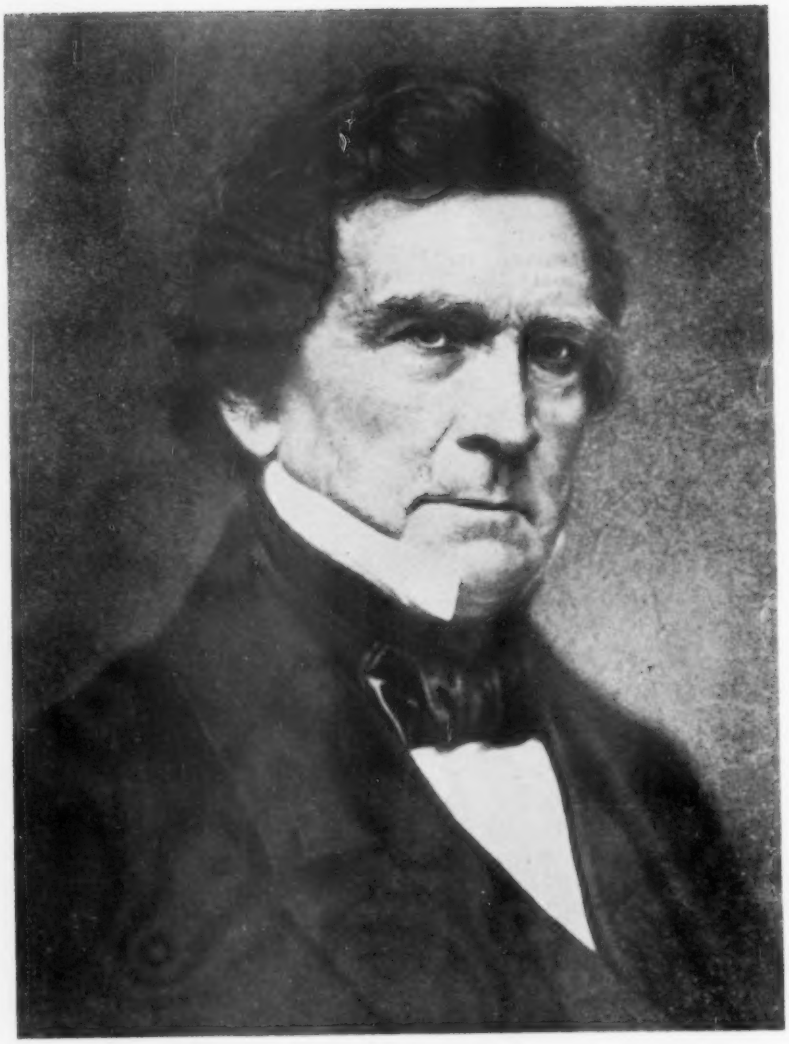

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MENTAL STATES IN CHRONIC ENCEPHALITIS

BY WALTER BROMBERG, M. D.
ASSISTANT PHYSICIAN, MANHATTAN STATE HOSPITAL

The importance of the psychiatric reactions in chronic encephalitis is becoming greater, as an increasing number of patients are found who develop abnormal mental states comparatively late in the course of their disease. This has led to the belief that the presentation of our group of 135 cases of psychosis with chronic encephalitis* might prove of interest to clinical psychiatrists either in private practice, hospital clinics, or in state or private institutions. From a less practical point of view, the close analogy between these mental cases and the so-called functional psychoses raises questions of tremendous theoretical, as well as diagnostic and prognostic importance. Thus Schilder[1] and Powitzkaja[2] have dealt with the problem of the influence of organic lesions on psychic symptoms; Jelliffe[3] has discussed the question from a different angle. The forensic aspects are likewise of interest and importance; Langen[4] observed a case of homicide in an encephalitic, and Rossi[5] has discussed the question through the consideration of the various types of antisocial acts perpetrated by encephalitic patients. In our series there are several patients who committed felonies, such as burglary, rape, grand larceny, etc. A final justification for this study is the fact that scant attention has been paid to adult reaction types in the literature of this country, compared with the numerous publications dealing with the behavior disturbances in children following chronic encephalitis.

Material. The 135 patients studied include all the admissions diagnosed as "Psychosis with Chronic Encephalitis" admitted to the Manhattan State Hospital from 1920 up to the beginning of 1930. Of the entire group 71 were examined by the writer, the remainder being studied from the hospital records. In 1921 Kirby and Davis[6] reported 18 of these cases; in 1926 Folsom[7] reported 71 additional cases, but from another point of view than the one presented here. In every case the diagnosis was made certain by the presence of characteristic neurologic signs of chronic encephalitis

* By permission of the late Dr. C. Floyd Haviland, Superintendent, Manhattan State Hospital, Ward's Island, New York City.

or by a history of the recognized signs and symptoms of acute epidemic encephalitis.

A classification was employed which roughly divided the cases according to their dominant psychiatric picture; for it is a common observation that several mental pictures may be present successively in the course of a given case. The grouping employed is as follows:

		Number of cases
1.	Psychopathic reactions (''behavior problems'')	70
2.	Intellectual enfeeblement	2
3.	Affective reactions (depression, euphoria, etc.)	27
4.	Schizophrenic-like states	9
5.	Paranoid conditions	13
6.	Hallucinatory states	1
7.	Impulsive acts	1
8.	Compulsive movements	2
9.	Psychasthenic reactions	1
10.	Confusional states	1
11.	Acute cases	8
	Total	135

Because of the voluminous material and for the sake of brevity only one illustrative case will be presented for each reaction type.

1. Psychopathic Reaction

It has been abundantly noted that following in the wake of epidemic encephalitis, disturbances of behavior seemingly caused by a more or less complete change of personality, were common in children. Bonhoeffer,[8] Hohman,[9] Bond and Partridge,[10] Spence,[11] Ebaugh,[12] Marshall,[13] Strecker,[14] Gibbs,[15] and many others have described these cases. In a general way the behavior changes were characterized by an inability to adjust to social life. As Bond and Partridge pointed out, the behavior of these cases seems to fall back to ''an infantile form of activity'' with uninhibited responses and a total ''disregard for external controls.''

Symptomatology: Because of the voluminous literature on this aspect of the subject, a detailed discussion is out of place here. However, it may be of interest to state briefly the outstanding symptoms. Characteristically the misbehavior is in a setting of general ''continued incorrigibility.'' The diversity of symptoms indicates clearly that there is no selection as to object assailed.

Bonhoeffer says the misbehavior has a "special character in that the whole environment is attacked." It is similar to but not identical with "psychopathy" in the sense of modern psychiatry. One notes underlying much of the misbehavior a constant desire to be doing something, a "pressure of activity" with an element of compulsion in it. Haskover[16] has used the term "akathisia" to indicate an analogous tendency to always be "on the move." The most troublesome behavior problems are:

1. Love of excitement.
2. Constant hyperactivity.
3. Assaultiveness—especially of defenseless persons.
4. Impudence and disobedience.
5. Lying.
6. Begging for money; panhandling in public.
7. Constant complaining.
8. Logorrhea.
9. Constant playfulness.
10. Teasing.
11. Emotional lability.
12. Irritability.
13. Vagrancy.
14. Petit and grand larceny.
15. Maliciousness.
16. Meddlesomeness.
17. Amorousness.
18. Excessive sexual drive.
19. Sexual perversions—homosexuality and pederasty.
20. Gambling.
21. Irresponsibility.
22. Abusiveness and temper tantrums.
23. Pyromania.
24. Stubborness.
25. Obscenity in children.
26. Constant "kidding."

The existence of separate, successive reaction types in the same patient has been noted in these cases by many. Because of its theoretical significance it deserves further emphasis. Wimmer[17]

and others have taken the development of successive mental states in a given patient, to constitute evidence of the active continuance of the cerebral organic lesions of encephalitis. Such a case is presented here illustrating behavior changes, followed by depression, a trend reaction and somatic delusions occurring over a period of years in an encephalitic.

CASE 1. (LL—32). A young man aged 20 on admission in July, 1925. Past history, negative. Patient was a good student in school. Personality described as that of a day-dreamer, was shy in the presence of girls. Sudden illness in 1921 with headache, diplopia, blurred vision, drowsiness, myoclonic twitchings of right leg, bilateral ptosis and polydipsia and polyuria. Patient made slow recovery over period of three months. Soon after he began to show inordinate interest in sex books; masturbated excessively, at times with pictures of bathing girls before him. He stopped working, spent his time at home alone. Became assaultive to his family and would go into tantrums of rage without provocation. Once attempted to set fire to the house. On one occasion he tried to commit sexual assault on his sister.

In 1922 patient was admitted to Kings Park State Hospital; here he was simple, lazy and hypochondriacal. At that time he showed ocular muscle signs and a gagging tic with persistence of the polydipsia. In 1925 he was discharged but was sent to Manhattan State Hospital within five days because of quarrelsomeness at home, gambling and minor thefts.

On admission here patient showed a picture of moderately advanced Parkinsonism with excess salivation, and right facial weakness. At this time he expressed a paranoid trend against his family due to his return to the hospital; this soon cleared up. With further advance in the rigidity and vegetative symptoms, he developed a reactive depression and worried about his earlier misdemeanors. Later the patient developed a trend against the attendants on the ward, saying that they were "against him." At present he thinks that all his "insides have dropped" into his stomach. Says at times that he is "paralyzed all over." Sensorium is clear; memory shows no disturbance; general activity has slowed up with progress in muscular rigidities.

Sexual Symptoms: Aberrations of the sexual instinct are very common in chronic encephalitics. In this field a distinction should be made between sexual disorders associated with somatic sexual changes and those without such changes. The latter type has been noted by many, particularly Bürger[18] and Staehlin[19] and will be discussed first.

Bürger considers this increased sexuality as part of the changed character of the encephalitic and not as a direct increase in the libido—the loss of normally developed inhibitions allowing the release of such conduct. In this series unusual sexual activity occurred many times, as in a boy of 14 who was an active homosexualist and practiced perversions (coitus intra femora) on schoolmates. Material to illustrate increased sexuality is so com-

mon that quotation of cases is unnecessary here. On the other hand impotence following encephalitis was noted by Sabrazes[20] and Kauders.[21] There were no cases with decrease of libido or impotence in our series.

In the second group occur cases with somatic sexual changes with or without sexual hyperfunction. In Wimmer's[22] case pubertas præcox occurred in a girl of 14 without any undue sexual activity, while in Stern's[23] report a boy of 14 developed marked pubertas præcox with excessive onanism. Other endocrinal changes have been noted, as Froehlich's syndrome with small genitalia and other eunuchoidal characters; one of these cases occurred in our series.[24] Schuller and Weygandt[25] and others have described similar cases. Another patient of our group showed obesity with early genital development (GR—108) similar to the case noted by Hofstadt.[26] An interesting endocrinal variant occurred in the following case, combining organic and psychic sexual hyperactivity.

Case 2. (AA—52). A young woman admitted in 1924 at the age of 20. Past history was negative. Patient did well in school and later, in business. Her personality was described as happy, affectionate, frank and open. In 1922 she developed an acute illness with drowsiness, diplopia, headache, twitching of extremities and later marked somnolence. Recovery was gradual, following which she showed marked personality changes. During the two years preceding admission she was frequently "dazed," without ambition and finally gave up her work. At times she was depressed and mildly paranoid against her neighbors; said "They are jealous of me." At one time she hallucinated a boy's voice speaking to her.

In the hospital the patient was silly, annoying, impulsive. Sensorium was clear. She was greatly preoccupied with sexual themes. Talked constantly about the boys she associated with; complained that they took "liberties" with her although there never was any actual sexual intercourse between them. Persistently asked if she were "ruined" because of masturbation. Never tired of speaking about her virginity and of her encounters with men.

Physically the signs were a right facial weakness, unequal pupils and endocrine changes—tapering fingers, short extremities out of proportion to entire figure, excess hirsutes on lips and face, masculine pubic hair distribution, irregular menstruation.

Character Changes in Adults: Behavior changes in adult chronic encephalitics of the characteristic antisocial type found in children have been rather infrequently reported. In the discussions of American authors this reaction type has been practically neglected, if such cases have been observed. Indeed, this is doubted by some. Marshall says in speaking of mental sequelae that "psychomotor excitement . . . shows a preference for early

years'' while ''mania, melancholia, and confusion'' belong to youth and adulthood. Kant[27] (Cases 1 and 3), Hoven,[28] Rossi[5] (Case 1), and Wimmer quote such cases. The latter emphasizes this group of adults who show asocial and moral changes after an earlier psychasthenic state. The infrequence of these adult character changes has theoretical significance, for their study may shed light on the so-called ''psychopathic constitution.'' The hypothesis, advanced for such personality changes in children, that cortical disease, i. e., encephalitis, allows a ''release'' of these more primitive behavior patterns, may be likewise extended to adult encephalitics. Here, then might be some basis for considering psychopathy as a constitutional condition. Such a case is reported below.

CASE 3. (CR—31). A man of 43, a successful engineer, admitted in 1929. Past history was negative. Personality showed no abnormality; he was intelligent, sociable, a good parent and husband, and a regular church-goer. In 1925 he suddenly became sleepy, and developed weakness of the left extremities: a diagnosis of epidemic encephalitis was made by several neurologists. Soon after the acute illness the patient's conduct changed. He became irritable, profane, and excited. Sexual desire increased. He demanded that his wife pose before him in the nude and insisted upon various suggestive poses. He became unfaithful, deserting his wife and living with another woman in Florida for three months. In 1927 his wife divorced the patient for cruelty, abusiveness, and because of his terrific outbursts of rage. He was referred to the hospital because of difficulty in managing him.

On admission he was restless, untidy, and noisy; tried to domineer over the nurses. Neurologically he showed signs of severe involvement with rigidity, pupillary signs, myoclonic twitches, left hemiplegia, sialorrhea, mask-facies and dysphagia. The patient made an exitus soon after admission due to increase in extent of bulbar lesion.

Predisposition to Psychopathy: It might well be assumed, that if any definite relationship were found to exist between antisocial manifestations occurring after the encephalitis, and a pre-existing psychopathic personality, the theoretical implications would be far-reaching. However, it has been an almost uniform finding that no such correspondence is present. Most of the authors consulted make this point. In our series only 7 out of 72 behavior problem cases showed any indication of pre-existing psychopathic personality. In these individuals there was no particular increase in the intensity of the reactions contrasted with the other cases. It is reasonable to conclude that such predisposition is no more than a coincidence, in the determination of the reaction type occurring in these cases. In this connection it would

be well to quote one of the seven cases, who in contradiction to the general rule does show a predisposition in its personality make-up to the development of "behavior" symptoms; which symptoms, as Kirschbaum[29] early pointed out, have a real similarity to the behavior of the constitutional psychopath.

CASE 4. (KF—46). An Irish woman, aged 40, domestic worker. One sister and a half-brother were insane. Patient was only a fair pupil in school but was a good worker in industrial life. Medical history was without noteworthy occurrences. Anamnestic information was very meager concerning her early life.

In 1919 the patient was married to a man who was a drunkard. At that time following a quarrel she became excited, assaultive and attempted to kill her husband with an axe. She jumped from a window to escape arrest afterwards. She was taken to the Kings Park State Hospital where she soon was discharged as a psychopathic inferior, with episode of excitement. In 1921 the patient was readmitted because of another episode of excitement with flighty incoherent speech, violent behavior, and suicidal ideas. Again she was discharged with the same diagnosis.

The following year the patient developed fever, weakness, headache, choreic movements and tremors of the hands during an attack of influenza. One year later (1923) following an accident the tremors were accentuated and signs of Parkinsonism rapidly made their appearance. Because of emotional excitement and instability she was sent to Bellevue Hospital and thence to the State hospital.

On examination the signs of Parkinsonism were evident. Mentally, she had suicidal ideas and complained of hearing voices; she was assaultive also. She continued to have disturbed periods during which she would break dishes and throw cups around the ward in a rage. In spite of the increasing muscular rigidity the periods of restlessness and excited activity persisted until close to the time of her death in 1926.

2. INTELLECTUAL ENFEEBLEMENT

The impression of intellectual enfeeblement which victims of chronic encephalitis give was early found to be based not on actual intelligence defect but on the dullness of expression that the hypomimia of the facial muscles imposed, as well as the retarded speech caused by the general muscular rigidity. Parkinsonian patients especially, burdened with a severe akinesia, were found to be hampered by this factor rather than by any psychologic disorder, finding it "an effort" to make a movement, and thus giving the appearance of dementia in the course of an ordinary psychiatric examination. Careful psychometric examinations have demonstrated the absence of any real intelligence defect in the chronic encephalitics, except in the special case of children who developed their acute illness at an early age. In this latter case the changes were in the direction of an arrest of intellectual development.

A few references in the literature stating that dementia occurs in chronic encephalitics are merely clinical impressions and not supported by psychologic data. Voivenal and Riser[30] report a case whose picture was "like a dementia" with severe loss of memory; Litwack[31] noted an adult who had mental tension defects and memory disturbances; and Hoven[28] (case 4) observed a case ending in "complete amentia" in an adult. None of the cases of our series showed any changes resembling these observations.

In the instance of arrested development, one interesting point stands out: that children in whom the acute attack of encephalitis occurred before the age of 2 or 3 show such arrest of mental development sometimes to a severe degree. Duncan[32] found that 6 out of 9 children whose age of onset was below 3 years showed mental deficiency during the chronic period of the disease. Spence noted the tendency for the development of "amentia" in cases where the age-onset incidence was below 3 years. Hallowell[33] in a series of 24 carefully tested patients of the behavior problem group found that 3 children showed severe mental defects, amounting to idiocy—in these 3 cases the age of onset was 1 and 2 years. Likewise Hall[34] states that idiocy occurred in children up to the age of 5 years, and Patterson and Spence[37] found that 7 of 17 patients were of the idiot level where the onset of the acute illness occurred in the years of infancy. Most authors believe this arrest of development in early years is due to the fact that the encephalitic virus attacks brain cells as yet undeveloped and causes unremediable damage.

The question of less severe mental damage has been studied by Dawson and Conn[35] among others. In well controlled tests, using the Binet (Burt) test, and making full allowance for motor disturbances and for the factor of inattention due to restlessness, they found the general average for 46 chronic patients (children) to be I. Q. 84.6 compared to an I. Q. average of 90.5 in the non-encephalitic controls (children). They showed further, that a slight deterioration did occur in the course of the chronic illness which is due to arrested development; that Parkinson patients did not differ from the others; and that previous mental deficiency was unrelated to this mild but measurable deterioration. On the other hand Sherman and Beverly[36] believed that the deteriora-

tion was entirely due to emotional disturbances, motor retardation and the like.

In our series of cases, 15 of the behavior problem group were given psychometric examinations. Although no special technique or precautions were used for the Parkinson cases—the Binet-Simon test being used in the usual manner—the results of these examinations agree in general with most of the reported work on the subject. The I. Q. values ranged from 60.2 to 94.8 in 15 patients whose ages ranged from 9 to 21 years. A mean average of 73.3 was obtained for the whole group tested.

Only two cases of the entire series developed the acute attack at the age of three or earlier. The first patient (MS—129) demonstrated an arrest leaving her with a rating of moron when psychometric examination was given, 6 years after the initial infection. The second patient showed a definite inability to "learn," which seemed to be due to difficulty in forming percepts and concepts of the slightest complexity. This phenomenon appears to be the "arrested development" to which attention has been called in the literature.

CASE 5. (JS—113). The patient was a boy whose birth and early development presented no physical or mental abnormality. Family history was negative. In 1921, at the age of three years, he became suddenly ill with drowsiness, confusion and coma, which lasted five days. Later inversion of sleep ratio occurred. After a slow convalescence, restlessness and visual hallucinations appeared. At school he was found to be unable to learn; at home his parents noted the same thing. He would not apply himself to any task—even to play. He became seclusive, depressed and impossible to manage, roaming the streets all day.

In 1927 the patient was admitted to the hospital. Examination showed a typical picture of the Parkinson type with rigidity, cog-wheel phenomena, mask-facies, bradyphasia, tremors, retropulsion, convergence difficulty, pupils reacting sluggishly to light and poorly to accommodation, occasional dyspneic spells.

He was restless and irritable, but at times friendly in a childish way. His speech was limited to words of one syllable. He did not know the days of the week, or any of the simple facts of his illness. He could not be taught even simple manual work in the classroom. It was almost impossible to hold his interest in anything. However, he seemed to have a general understanding of his situation and cared for his wants.

The main difficulty was an inability to acquire "letter-knowledge." The patient himself said he could not learn. All his time was spent wandering aimlessly about the hospital grounds alone. Psychometric tests (performance tests) showed an I. Q. of 63 with a M. A. of 6.8 and a C. A. of 11, in 1929.

3. Affective States

The occurrence of affective disturbances at some time in the course of the several forms of chronic encephalitis has been commonly observed. Usually these disturbances are transient; they may be emotional lability, mild depressions, irritability, apathy, anxiety, excitement and less commonly, euphoria. There are cases where this affective reaction is so predominant that the resemblance to the functional psychoses is unmistakable and determines a diagnosis of the psychosis.

Depression: The commonest type of emotional reaction in our material was found to be that of depression. Rouquier,[38] Cuel and Cenac,[39] Wimmer and a host of others have reported this type of case. In these patients a distinction could be made between two types of depressive reactions. The first of these was reactive in nature—reactive to the patients' knowledge of the progression of a disease that gradually and mercilessly transforms them into a condition of helpless rigidity. When the clear sensorium of these akinetic patients is considered, the reaction becomes understandable. A case of this type is here subjoined.

Case 6. (LP—134). A young man admitted in 1929 at the age of 22 years. Past history negative. Personality and mentality showed no abnormalities. In 1924 the patient developed symptoms typical of epidemic encephalitis. Was treated at Bellevue Hospital where a diagnosis of epidemic encephalitis was made. The development of Parkinson signs with oculo-gyric crises proceeded rapidly during the next three years. About four years after onset the patient became despondent, discouraged and worried over his future. A week before admission he attempted suicide by gas inhalation twice in the same day.

On admission signs of a pronounced amyostatic form of chronic encephalitis were found; he spent most of his time in a chair because of his severe incapacitation. Mentally he was depressed, irritable and fretful. Sensorium was clear. Patient worried constantly about his condition. Worried about masturbation and pollutions which he thought were due to his physical condition. Complained that people looked at him because of his rigid gait. Was quiet on the ward; mood was constantly one of depression. Complained of oculo-gyric crises which he related to his masturbatory practices. Occasionally would be tearful over his situation.

A second type of depression was found in the minority of this sub-group, in which the affective picture resembled that of the depressed phase of manic-depressive insanity where the reaction is due to the motivation, presumably, of non-conscious material. This is in contrast to the depressive cases just discussed. In this connection the question of the pre-existence of a cyclothymic per-

sonality is significant, for the hypothesis suggests itself that here, too, the cerebral disease allows the elements of a syntonic type to be released as symptoms manic, or depressive in nature. Golant-Ratner and Matusoff[40] reported a case showing two distinct phases, one manic-like and the other melancholic. In our case a cyclothymic make-up must be admitted. In this case also attention is drawn to the transient amnestic period with hallucinations which Wimmer[17] has stressed and which he called "transient clouding."

CASE 7. (GL—51). A housewife admitted for the first time in 1924. Early history without abnormalities. Patient was a happy, sociable person but inclined to worry over trifles. In 1918 she suffered from an attack of influenza followed by depression, and emotional instability from which she gradually recovered. In 1923 another acute illness occurred with insomnia, vomiting, numbness of the extremities, inability to concentrate and confusion and anxiety. At this time physical signs were limited to lid ptosis and loss of associated movements. The patient was treated at the Neurologic Institute where a diagnosis of epidemic encephalitis was made. Following this illness she remained nervous, depressed and headachy.

In 1924 while still in this condition, the patient took an overdose of veronal. Because of the concomitant depression, anxiety and restlessness she was admitted to the hospital. For a time she was confused and had persecutory delusions and auditory hallucinations. These cleared up but a definite period of amnesia for the confused episode existed. The mild depression continued even after discharge. However, the patient continued well until 1928.

In November of this year she became apprehensive, nervous and insomnic immediately after an accident had occurred to her child. She was readmitted early in 1929. At this time the patient was depressed and concerned about her family. She said "I feel despondent. I often think my case is getting hopeless." She had numerous fears—that she would be locked up in the hospital for life, that her husband was hurt, etc. She seemed fearful and frequently sought to protect herself from fancied harm. She easily became lachrymose. The depression cleared up several months later sufficiently to parole the patient from the hospital. At this time the only physical signs were some stiffness of the facies, convergence defect, irregular pupils with absent accommodative reflex.

Manic-like States: While true mania has not been observed in cases of chronic encephalitis, manic-like states have been reported, although rather infrequently. Hoven[28] (Case 5) has seen a patient of this type. A distinction must be made between the characteristic manic picture based on the triad of elation, flight of ideas and pressure activity with distractability on the one hand, and the picture of general hyperactivity and excitement seen in the behavior problem cases on the other hand. In the latter case the patient is talkative not flighty, excited not elated or euphoric, and shows

lack of restraint rather than pressure activity. In the case to be presented the clinical picture is probably closer to hypomania than true mania, occurring in a setting of behavior incorrigibility.

CASE 8. (RG—65). A young woman with negative past history. Personality demonstrated no striking traits. She had made a good record in school. In 1922 at the age of 18 the patient developed acute epidemic encephalitis. She was treated at Mt. Sinai Hospital for ten weeks. About six months after the acute illness she began to show anti-social behavior and hypomanic activity. In 1925 she was admitted to Central Islip State Hospital where she was noted as elated, loquacious, argumentative and lying. On the ward she was active and noisy, interfering with the routine of the nurses; she continued to be talkative.

After two months the patient was transferred to this hospital. On admission the physical findings were confined to tremors, muscle twitches and pupillary irregularity with sluggish reaction to light and accommodation. She continued elated, flippant, over-productive and rambling in her stream. She frequently required mechanical restraint because of her hyperactivity. At times she was childish, silly and emotionally unstable. The over-activity quieted down in a few months but paranoid ideas against the nurses were developed. The patient said they were signalling out of the windows to persons who were going to harm her. She was assaultive and continued to show some misbehavior until discharge, three months after admission. At this time the hypomanic phase had largely disappeared.

Euphoria: The occurrence of euphoria without other signs of the manic reaction is much less frequent. It is interesting to observe this reaction in cases of marked Parkinsonism—as Kant[27] (Cases 2 and 4) has—standing out in contrast to the reactive depression often found in the chronic encephalitics. The case which follows presents a character change in addition to the euphoria.

CASE 9. (AK—135). A man aged 41 at the time of his admission in 1930. Family and past history were negative except for an attack of influenza in 1918 from which he recovered without residuae. Personality was described as normal in every way. He had always been a good husband and father. In 1926 the patient developed a respiratory illness diagnosed as pneumonia; it was followed by nervousness, weakness of the extremities, tremor, and a gradual increase in muscular rigidity of the whole body, over a period of three years. For the six months preceding admission he had become moody, unstable, flew into frequent rages; he also developed persecutory ideas —said he was not being treated well and became domineering. His wife reported that there was a marked change in his personality.

On admission marked neurologic signs were noted. Tremors were severe, retropulsion, rigidity, sialorrhea, bradyphasia, and bradykinesia were present and compelled patient to spend most of the time in a chair. Mentally he showed no trends; sensorium was clear; stream was relevant and coherent. Patient made good contact, said he was satisfied with the hospital and was getting better. Was happy, smiling and cooperative. Said he ate well, slept well and that "everything was fine." Insisted that he was never worried or downhearted. He knew that his brain was "all right,"

but had the "shakes." Smiled when he said that his physical condition was worse since 1926. Occasionally he exhibited emotional instability, i. e., when his wife visited him he became lachrymose.

Emotional Dullness: In many of these cases, particularly where Parkinson signs are present, the apparent apathy and disinterest in the environment gives an objective impression of emotional blunting. There are two factors which seem to assist in forming this impression. One is the decrease or absence of facial mimicry due to fixity of the facial muscles of expression. The other is the poverty of all volitional movements, which, as Wilson[41] points out is probably due to an "unwillingness to move" because of the effort involved, due to the state of constant "relative contraction" of the peripheral motor system. Nevertheless this indifference in some cases is so marked that a clinical sub-grouping seems justified, at least from an objective point of view. Verger and Hesnard[42] remark that this special mental state, which they term an "ideative bradypraxie" seems to embrace all aspects of the bradykinetic patient's life. A case illustrating this reaction is given from our series showing objective mental dullness to be greater than the limitations which the rigid muscular system imposes on the patient's volitional life.

CASE 10. (MJ—12). A negress admitted in August, 1922, with a history of having recently "slowed up." Her past history was without abnormality. Personality always considered normal. She had a limited education but had a good industrial record. In 1920 an illness developed consisting of headache, fever, weakness, diplopia, from which she recovered in a few weeks. Although she suffered from vague feelings of malaise she worked up to the spring of 1922. At this time it was noticed that there was a gradual loss of interest in her environment; work became inefficient and she became personally untidy. She would stand for hours in a "brown study" and when questioned about this she would say "nothing is wrong." During the next few months she became very slow. She also was irritable, and annoyed with her family. She could not be managed.

On admission the physical signs of Parkinsonism were present, rigid attitude, fixed facies, tremors, bradyphasia, pupillary irregularity, starry eyes, etc. Gait was slow and greatly handicapped due to rigidity.

Mentally the patient was clear, without trends, had good insight, but productions were quite meager. On the ward she took no interest in her environment. Emotionally was apathetic, suggesting at one time a catatonic stupor reaction. Patient said "I have a feeling of no ambition." During the five years of residence at the hospital disinterest, disinclination to talk, and absence of emotional display in behavior and speech continued. At times, periods of mild euphoria were interjected into this almost constant apathy.

Suicide: The prevalence of suicidal attempts among chronic encephalitics, especially in the depressions, is so great that it constitutes a medico-legal and custodial problem of no little consequence. Many authors have commented on this point. Although suicide may not be considered apart from its psychic motivation, several authors as Euzière et al,[43] Laignel-Lavastine et al,[44] and Rossi have made special study of the subject. In our series of 135 cases with varying mental states, a tabulation shows no less than 20 suicidal attempts and threats with one actual suicide. From these figures the importance of the custodial problem can easily be seen.

4. Schizophrenic-Like States

The interesting mental states in chronic encephalitis that superficially resemble schizophrenia have been fully discussed by several authors in the literature. Our material has yielded nine cases of this type. Reference is not made here to the cases where a schizophrenia has become evident or was precipitated by the encephalitic infection. Trunk[45] described the case in which epidemic encephalitis reacted on an individual with a schizoid personality to produce a schizophrenic psychosis; Gurewitsch and Tkatschew[46] likewise reported a case where encephalitis caused a schizophrenic reaction in a disposed individual similar to one produced through a psychic conflict in the same person, several years before the onset of acute encephalitis.

The more common schizophrenic-like state as described by Leyser,[47] Neustadt,[48] Steck,[49] Guttmann,[50] Burger and Mayer-Gross[51] and others depend for their similarity to schizophrenia on the presence only of the characteristic mental content of the schizophrenic delusions, hallucinations and ideas of reference. The fundamental symptoms, as established by Bleuler, of affective inadequacy and poverty, disassociation of thought, and autism are absent in the mental states. Only the accessory symptoms of schizophrenia are observable, so that it may well be said with Neustadt that the picture represents a "symptomatic psychosis" of an organic brain disease resembling in some aspects the schizophrenic pattern.

The case quoted here shows in addition to the points already discussed, a trend of markedly florid character, comparable to

that of Perlmutter's[52] case. The characteristics of the grandiosity which our case presents is closer to that of schizophrenia than of general paralysis, a point which Perlmutter makes. As pointed out above this patient shows the coloring rather than the fundamental symptoms of schizophrenia in his reaction.

CASE 11. (BD—2). A youth normal in every way previous to 1923. Past history was negative for physical illness; did well in high school where he was athletic and studious; he was well liked by his school mates. In 1923 a sudden illness developed, the onset being with somnolence, diplopia, tremors, and delirium with later insomnia. He was treated in a general hospital where a diagnosis of epidemic encephalitis was made. After a slow recovery patient did well until a year later, when he became irritable, mischievous, fault-finding. He was treated at various clinics for the neurologic signs which became manifest at this time. His unruliness continued and grew worse. For six months prior to admission he developed a delusional system of an expansive nature, saying that he was the Messiah, the son of David and was sent to bring peace to the world.

When admitted in 1927 at the age of 22 to this hospital the patient was restless, resistive, surly. Memory, orientation, mental tension were intact; insight was good for the physical disease but was absent for the delusions. Stream tended to be slow and difficult to understand but was coherent. Patient showed a good affective reaction to his examiners and to his environment. He was often annoying because of the whining, insistent way in which he insisted on his release.

Physically the signs were marked. Parkinson attitude with severe rigidity, facial rigidity, a left hemiparesis with Babinski on left, sialorrhea, pupillary irregularity, accommodative reflex much impaired, convergence difficulty, and inability to look downwards were present. The entire picture was one of advanced Parkinsonism. The outstanding mental feature was the delusional system which is still present and has even been extended. The patient said that his being a Messiah was signalized by the flight of certain birds outside his window. He said that a halo around his head, visible under an electric light proved this (showed it to the examiner). He stated that leprosy and "gangrene of the spine" were transmitted to him in the hospital but he was able to conquer these diseases in addition to "paralysis agitans" because he was supernatural. His "brown" brains proved this fact. Angels were coming to recognize him as the "Anointed One," and West Point officers were likewise on their way to confer with him on important matters. The angels were "all good-looking fellows, several feet high" At one time he wrote letters with some sort of cuneiform characters which he said were Chinese letters and that only he knew their meaning. Ramification of his grandiose trend continued. During the past few months he has been busy writing about the descendents of his race who will be "intellectually brilliant, very honest, very loyal, very friendly, very courteous, very kind, very brave," etc. and they will be unaffected by "a hypodermic of leprosy or black plague germs." Again his brothers-to-be will have "eternal life, eternal health, eternal happiness, eternal wealth, etc." They will "be like their Big Brother, when I'll be cured in the near future." It is "written in the Gospel that such is the case for I am the Anointed One."

At one time the patient formed a persecutory delusion against some visitors to the hospital who he said had come to force him to marry one of their daughters. As must

be evident from the material above, he hallucinated actively; at one time remarked that a voice said of him "when he gets better he will be very handsome." Although the trends add new elements often, the main theme, tied up with his self-aggrandizement, continues to be active.

Catatonia: Attention has been called to the close similarity of catatonia and some types of chronic encephalitis. This has served to bring into view the problem of the physiologic pathology of catatonia and in general of dementia præcox. The question has been discussed by many from various points of view. Thus Steiner[53] thinks that "many catatonic symptoms are . . . extrapyramidal rigidity with predilection for certain muscles," while Bostroem[54] and Stertz[55] conclude that catatonia and striatal movement disturbances are not really identical. Without examining this problem further the following case may be offered as indicating some relationship between the two conditions. The diagnosis of chronic encephalitis while not certain, is offered on the basis of the acute illness, the serological findings and the peculiar behavior of the entire clinical picture. Euzière[56] et al and other authors, especially among the French, have observed cases of post-encephalitic catatonia.

CASE 12. (LK—109). The patient was a boy of 12 at the time of his admission in 1927. His intelligence was above the average and his personality was frank and open, active in games and in school; there was never any suspicion of seclusiveness. In 1926 the patient developed an illness, diagnosed as influenza and starting with a respiratory infection, anorexia, headache, pain over heart region and general disinterest in his previous activities. He refused all food, stopped talking, was lethargic. He was observed at a general hospital and then transferred to the neurologic service at Bellevue. There he remained in the same dazed condition. For several days he signalled with his hands to indicate his wants but soon lost all power of communication and remained immobile, mute and apparently comatose. Examination showed only a twitching of the eyelids, vegetative changes as excessive sweating, vasomotor disturbances; for several weeks he ran a temperature of 100°. Respirations were always rapid, ranging from 32 to 98 per minute. Spinal fluid was under increased pressure with 2+ sugar and pleocytosis of 200 cells on one occasion.

On admission to this hospital after two months' observation at Bellevue the condition was noted to be the same. No neurologic signs were found. Patient remained inaccessible, had to be tube-fed, was incontinent, and immobile for the two years of his residence. At times he was observed to roll his eyes outward and downward conjugately. During the few months preceding termination, definitely irregular pupils were found but reactions were normal. General condition was fair except for the marked pallor and general atrophy of tissues from disuse. Occasionally when the patient opened his eyes it was observed that a left ptosis was present. Mental content was impossible to obtain. Patient died suddenly without any cause being discovered. Unfortunately an autopsy could not be obtained.

5. Paranoid Conditions

Paranoid-Hallucinatory States: Among the mental states occurring both in the acute and chronic phases of epidemic encephalitis, episodic paranoid-hallucinatory conditions in a clear or cloudy setting, are comparatively frequent. An early case of this kind was reported by Thompson[57] occurring in a clear setting. Since then many other cases have been described and discussed from different angles. Domarus[58] likened his acute case to the exogenous reaction type of Bonhoeffer; Wimmer drew attention in his group to the difficulty in differentiating between paranoid hallucinatory states as such and the delusions and hallucinations of schizophrenia because of the tendency of the former to merge into the schizophrenic-like states. Many examples of this reaction, usually as transient phenomena, were observed in our series. They constituted perhaps the most common single psychotic manifestation of the behavior problem group. The following case report illustrates a paranoid-hallucinatory trend arising as an isolated psychotic event in a chronic Parkinson patient.

Case 13. (FH—128). Patient is a Hungarian, an intelligent hard-working farmer. No facts of importance in the past history. In 1920 he contracted acute epidemic encephalitis with a typical history. About two years later narcoleptic symptoms made their appearance together with Parkinsonism. In 1929 while resident in a hospital for chronic diseases, the patient developed persecutory ideas with auditory hallucinations and ideas of reference against other patients. This led to his transfer to a mental hospital.

On admission examination showed a man of 34 with marked rigidity, tremors, hyper-active reflexes with ankle clonus and Babinski on left, retropulsion, irregular pupils with sluggish reaction to light and none to accommodation, and cataplexy. His physical condition incapacitated him considerably.

Orientation, memory, mental tension and stream were without defect. Emotionally he was dejected and mildly concerned over his illness. His trend persisted. He stated that the patients called him bad names in the other hospital. They wanted to poison him. People talked about him saying he was "dirty and nasty;" they wanted to throw him "overboard" because they "did not like me anyways." After several months the paranoid ideas gradually faded although he retained the general idea of his alleged mistreatment at the first hospital.

Paranoid States: The advent of a persisting paranoid trend in encephalitis has been described by Kwint,[60] Ostmann,[61] Guttmann,[62] Marchand et al,[63] and Schilder. In discussing the explanation of this trend Guttmann raised the question of a dormant "paranoid character" being activated by the encephalitis. Ost-

mann, on the other hand, suggested that paranoid ideas, such as infidelity, developed from certain psychic conflicts in the patient's life and were in some manner elaborated to delusions because of the background of the amyostatic symptom-complex. In our case no particular correlation could be established between the symptoms and a paranoid character. Furthermore, the lack of any feeling-mass attached to the paranoid ideas is in contradistinction to the large affective element present in connection with the trends of the usual paranoid psychotic patient.

CASE 14. (DB—34). A negro, 38 years old, whose personality was described as without striking traits except for a moderate degree of shyness; there never was any suspiciousness, etc. In 1923 an acute illness occurred with delirium and "hallucinoid" dreams. Recovery was complete for mental symptoms but signs of Parkinsonism slowly developed during the next two years. In 1925 while in a hospital for chronic diseases persecutory delusions against the nurses appeared. He said they were trying to annoy him by putting water in his egg-nog; he said the attendants tried to choke him. Because he objected to these persecutions, he said they had him transferred to a mental hospital. He had no insight into his charges concerning the nurses.

On admission to this hospital in 1925 he showed signs of Parkinsonism which have since progressed—he is now markedly amyostatic. Mentally he gave the impression of dullness but no disorder of stream or memory existed. There was some depression but later the predominant mood was that of euphoria. The delusions of persecution present on admission have persisted unchanged up to the present time. Patient is cheerful otherwise. He does not complain but if questioned will insist that the nurses at the other institution were against him, and had him sent to an "insane asylum."

6. HALLUCINATORY STATES

Schiff and Courtois[64] in two reports have presented cases with hallucinatory phenomena. They considered them to be less like the chronic hallucinatory psychoses proper than like symptoms of psychasthenia or schizophrenia, because of their variability, and the greater "critique" which was present. We have seen many fleeting sensory deceptions in these patients, which were probably related more closely to hypnogogic hallucinations than to true hallucinosis. In children especially, where these brief experiences occurred, they were prone to be "visions" of men or animals assuming frightening forms and often occurring at night. It is impossible to rule out the question of delirium for it has been observed that febrile clouded states may occur from time to time in the course of an encephalitic infection (vide infra). However, one patient of our series belongs in this category because of the clear setting in which the psychotic manifestations appeared.

The reactive anxiety from which this patient suffered reminds one of the emotional reaction that the acute hallucinotic often develops, as in the fear reaction of the acute alcoholic. Claude, Tinel and Michon[66] reported a case with paroxysmal anxiety crises reactive to hallucinations that commanded the patient to kill people.

CASE 15. (ES—91). A young girl aged 12, developed acute epidemic encephalitis with delirium, which was followed by signs of a character change. This continued and she became restless, impulsive, irritable, and depressed; she was unmanageable and was sent to the State hospital.

On admission typical and marked signs of the amyostatic form of chronic encephalitis were noted. Her chief behavior disorder was impulsiveness and emotional lability. Sensorium was clear; mental test gave her a result indicating average intelligence. At times she was quite agitated because of her hallucinations. Frequently she stated that a "big man" stood over her and whispered to her to "hurry up." Later she said another man spoke to her. She saw animals walk along the floor, and reacted with fear to them. After about two years of residence the patient still said that she heard the voice of a man speaking to her. Insight was absent for these hallucinations.

7. IMPULSIVE ACTS

Attention has been drawn to individual impulsive acts in encephalitic patients. These impulsive acts differ from those of the behavior problem cases. In the latter the morbid impulses are numerous and occur amid general incorrigibility, whereas in the former the acts are isolated. The condition discussed is probably allied to the older entity of impulsive insanity with its characteristic lack of reflection before the act and the absence of remorse afterwards, but without the background of psychopathic soil. Claude, Baruk and Lamanche[67] related a history of a patient whose impulse was to stifle every cat he saw; another patient had an impulse to pull his teeth out and actually filed 12 of them. Langen observed a case of impulsive murder in a young man who suddenly felt the impulse to strangle a child who was passing. Langen believed that the ethical sense in his patient was weakened by the character change caused by the encephalitis. Wimmer's[17] cases of paroxysmal dipsomania and of paroxysmal kleptomania (Cases 11 and 12) belong to this group also. The following case is the only one of its type in our material.

CASE 16. (EV—123). The patient was an illiterate simple woman of 22 at the time of her acute encephalitic illness in 1924. Previous history had been negative; personality contained no abnormal trait. During the two years after the acute illness

the signs of slowly progressing Parkinsonism were observed. With this was irritability, nervousness and meddlesomeness and occasional depressive mood. However, she seemed to adjust fairly well in spite of her handicaps until 1929. At this time she stole a box of face powder from a counter in a store. She was arrested and referred to a hospital for observation.

On admission she confessed to the theft saying that she wanted the powder but had no money with which to buy it. No mental defects were noted except a marked bradyphasia. During her residence in the hospital no further behavior disturbances were noted. Dejection and a certain amount of reactive depression were present; there were no other impulsive acts observed.

8. Compulsion Movements

An extensive literature has been concerned with compulsion phenomena since the extraordinarily diverse compulsive symptomatology appeared in the wake of the earlier epidemics of acute encephalitis. The majority of such movements, as oculo-gyric crises, respiratory tics, forced movements of various kinds, belong to a neurologic nosology rather than to a psychiatric one. Closer study has shown that these neurological compulsive acts have psychic components as well; the oculo-gyric crises with their accompanying anxiety reactions furnish an outstanding example of this combined symptomatology. The responsibility for these movements has been laid in general, to the lesions occurring in one of the centers of the striatal or mesencephalic regions. The question as to the relationship of psychic content to these phenomena has been raised. Some of the patterns seem to be patently representative of certain psycho-biologic fragments. The tics, as those centering around the oral zone (gagging tic), have been reminiscent of what is seen in regressed schizophrenic patients, in which situation the tics are thought of as symbolizations and representations of submerged psychic material. Jelliffe in several works[68] has investigated this problem deeply. His studies have led to a general formulation that the compulsive movements represent instinctive behavior patterns of a lower psychic level. He drew attention to the psychologic background for the "anxiety" which accompanies and forms an integral part of the compulsive crises, which anxiety arises from the primitive impulses which were "hitherto tabooed and censored by the sense of guilt, the super-ego of Freud" represented in the developed ethical sense of civilization.

In this paper, which is written from a purely clinical point of

view, a description of cases showing compulsive movements, is manifestly out of order. But because several patients were admitted with these compulsive phenomena, wrongly diagnosed as hysteria or neurasthenic disorders at a time when the completer symptomatology of chronic encephalitis was not known, one of these patients will be briefly presented. Hinsie[69] studied this case from the standpoint suggested by Jelliffe, and was able to demonstrate important psychic determinants, which, while they cannot be said to give the "why" of the attacks, do show psychic correlates having a bearing on the patient's state of mind during a compulsive attack.

CASE 17. (BJ—3). The patient was a schoolboy of 12, with a well-balanced personality, normal habits and interests and a good record at school. The study of the family yielded nothing of significance. In 1920 the patient fell ill, was restless, insomnic but sleepy during the day. Within a few months he developed various fears, such as claustrophobia. Physical signs were limited to a paretic nystagmus and a right facial weakness, noted by one observer. Several months later the following "fits" were noted.

The patient would suddenly drop to the floor resting on one or both knees and would hold his breath, puff out his belly, throw back his head while his eyes rotated outward and backward. These seizures were compulsive in nature. Otherwise no particular mental symptoms were noted. The "fits" were diagnosed as hysteria and the patient was referred to the hospital.

On admission myoclonic movements of the arms were noted. New tics appeared, such as squatting movements, compulsive scratching of the hands, and peculiar restlessness at night. Some time later facial grimaces and a trick of picking his nose appeared. The seizures described above persisted during his stay in the hospital.

The history of the acute illness, the few neurologic signs that appeared, and the respiratory tic (recognizable as the respiratory postencephalitic tics that appeared in such profusion later in the epidemic years) stamp the illness as characteristic of chronic encephalitis.

9. PSYCHASTHENIC STATES

Under this heading are included symptom-complexes which comprise neurasthenic as well as psychasthenic symptoms. This picture has been commented on by not a few observers and Wimmer[17] has given the subject special attention. In his description he considers the picture to be unlike the sequelae of encephalitis as the akinetic syndrome is a sequela of encephalitis. Rather he regards this picture as an intermediary step, a "Durchgangsstation" to other and more truly psychotic syndromes. Wimmer's description may be taken as typical of that given by most authors commenting on the subject. He discusses first a neurasthenic

group of symptoms such as headache, paresthesias, dizziness, palpitation and vasomotor symptoms; then a psychasthenic group which includes distractability, intellectual fatigue, indifference, aboulia, feelings of insufficiency, and various compulsions and phobias, hypochondriasis with misinterpretations of bodily sensations, and a depressive mood. In one of his cases Wimmer observed an episodic "feeling of strangeness."

Our material has provided abundant instances of this type of reaction, not always, however, in the same case. Indeed it is noteworthy that these states were transient frequently, giving place to other mental states later on. It is well to bear in mind that neurologic experience has demonstrated that an organic background may exist for many of the obscure pains and sensory phenomena for which physical signs do not at once appear. For example, hypochondriasis relating to cardiac function may conceivably have a causative pathology in some disturbance of the vegetative centers in the brain, due to encephalitic lesions in those areas.

Two cases will be briefly reported to illustrate this syndrome.

CASE 18. (EG—58). A housewife aged 26. Past history was without significant events. Personality was that of a calm unassuming individual, sociable but not demonstrative, not affectionate to her family. In 1919 she contracted influenza from which recovery was good. Nothing occurred until 1923 when signs of oncoming Parkinsonism made their appearance together with depression, bradykinesia and occasional irritability. On one occasion she made threats of suicide while standing before an open window. She was admitted to the hospital in 1926.

Examination at this time showed a pronounced Parkinsonism with bradykinesia, etc. Mentally the patient was depressed. She complained constantly. She said her condition was getting worse; she complained of her poor memory. She spoke continually of her fear that her baby would be hurt in an accident. Her mind was concerned with vague fears about what might happen in a subway accident should it occur. Sensorium was clear; no other mental symptoms were noted. After a year's residence she was transferred to another State hospital where the dejected and depressed mood passed off, and she became euphoric and good-natured, even though her incapacitation was worse than ever.

The next patient exhibited another reaction belonging to this general group. One may question whether some vegetative disturbance did not provide an actual background for the symptoms presented in this patient.

CASE 19. (DO—10). Young man aged 20, whose past history was without physical or mental abnormality. He had two attacks of influenza in 1918 and 1920 from

which recovery was ostensibly complete. In 1921 a third attack exhibited quite definite symptoms of epidemic encephalitis with coma and severe prostration. Within six months signs of chronic encephalitis appeared. During this period, while the characteristic rigidity was developing, he complained that his eyes were bad, that his bones were rotting, that he had pains in the head, and frequently asked to see a physician. He walked about crying and saying that his heart ought to be examined as he was soon going to die; he wished to be examined before he died.

On admission in 1922 signs of bradykinesia with rigidity were seen. His behavior was quiet and agreeable, but within sight of a physician he was anxious and complaining. His hypochondriacal ideas shifted from one region of the body to another. He said that he had "tertiary lues," that one foot was shorter than another, that he was afraid of developing a "hole" in his head, and that his heart had a "fluttering" feeling. Later in his course, in spite of the exaggerated neurologic developments, he became flippant and facetious, in contrast to his former attitude.

10. Confusional States

Wimmer[17] in his comprehensive study repeatedly referred to in this communication, observed a group of cases with recurring cloudy states, frequently with auditory and visual hallucinations or with a depression. Some of the confusional states were similar to the Korsakoff picture. The greatest interest attaches to these recurring mental states which Wimmer has described for the reason that in these he was able to find confirmation for his thesis that these cloudy periods are evidences of the continuance of the infection in the brain. In several cases hyperthermia was observed, the onset of which corresponded with the reactivation of the mental symptoms. In one case he was able to further confirm the diagnosis by obtaining characteristic spinal fluid findings during a confused period. It is entirely possible that such confusional periods are more common that is at present known for the reason that unless one is forearmed with knowledge concerning them, the episodes will be missed. The physical concommitants of the clouded period are, to judge from the literature, usually of a minor type and difficult of detection.

The case illustrative of this interesting condition in our material is still only presumptively encephalitic. Signs of Parkinsonism have not yet appeared to signalize an end-stage of the process and to point indisputably to the correct diagnosis. However, from a consideration of the history and the course of the physical symptoms coinciding with the changing mental state, the belief

seems justified that the patient is still suffering from a subacute encephalitic process affecting the central nervous system.

CASE 20. (JA—57). Patient is a girl who was 19 years old at the time of her illness. Her history revealed nothing of importance. She was a good student in school and was an efficient worker later. In January, 1926, the patient contracted grippe and complained of dizziness and weakness and sleepiness. The attending physician diagnosed the condition as epidemic encephalitis. For several months following this patient complained of her vision. She said that people were looking at her strangely. Her disposition changed completely; she was nervous, agitated and fearful. She was confused and unable to identify her surroundings. She hallucinated, saw "visions of eyes" which frightened her. In April of 1926 she was admitted to the hospital.

On admission no physical findings were noted except for a tremor of the hands. Admitted visual hallucinations. Persistently talked of her mother dying (mother was ill). Her stream was typical of delirium. She was disoriented, recent memory was poor, but remote memory better. In general her cooperation was poor because of distractability. Within a month the patient cleared up but had definite amnesia for her illness and for her delirious period. Was still somewhat lachrymose; insight was partially present; contact was good. Physical examination at this time showed tendency to flattened facies, weakness of external rectus muscle on left, some nystagmus but no other findings. Patient was discharged from the hospital with a diagnosis of encephalitis lethargica, delirious reaction.

Patient was not heard from until 1930 when she was readmitted with the history that three months before that time she had begun to have crying spells, and she would talk to herself in a low tone. About this time her movements were noted to be jerky and were more so when anyone spoke to her.

On admission she was observed to have frequent choreic movements of hands, head and neck; there were no other physical findings. Her behavior was peculiar—at times she would suddenly laugh for no particular reason. Contact was poor. Her stream was incoherent and scattered. At times she would suddenly cry for no apparent reason. She was disoriented, was confused as to recent events. She was distractable, was unable to do simple calculations; memory retention was poor.

When seen about two months after admission several changes had occurred. Contact was good and her attention, though still poor, was better than previously. On the ward she was quiet. Examination shows a coarse tremor of the hands and frequent grimaces, also movements of the lips resulting in clucking noises. All her movements had a definite element of explosiveness and ataxia in them, quite similar to what one sees in a moderately choreic patient. There were no other findings.

The patient was still disoriented. Her memory for recent events was poor. She was unable to tell how she came to the hospital, and she was still amnesic for the period of her residence at Bellevue. She herself, said, "everything seems mixed up in my brain" and although she denied hallucinations she said "I'm always thinking of a mix-up of different things in my mind and I see different things before me." Her stream is no longer scattered, however. General knowledge is fairly good. She no longer has fits of laughter but one notes that when she laughs or smiles the result is magnified by the explosiveness which characterizes all her physical movements.

11. Acute Cases

A small group of patients who were admitted to the hospital in some phase of their acute illness will be referred to here for the sake of completeness. Most of them were studied by Kirby and Davis.[6] All of them showed mental reactions corresponding to the reaction types mentioned by Kirby and Davis, Jones and Raphael,[70] Sands[71] and others. No further comment on this group of cases need be made in this study for obvious reasons.

Summary

I. In this clinical study based on 135 cases of psychosis with chronic encephalitis an attempt was made to point out the close similarity of mental reactions occurring in encephalitics to the pictures of recognized psychiatric entities. A classification was used in accordance with this plan following the lines indicated in the literature. Case material was presented by way of illustration.

II. The following are the main points brought out in this study:

1. In the large group characterized by antisocial conduct, personality changes were observed in a few adults although this is more common in children.

2. No predisposition to psychopathy was found to exist in the personality make-up of patients of the "behavior" group previous to the onset of encephalitis.

3. Two cases in this series confirm the almost uniform findings in the literature, of the occurrence of intellectual enfeeblement or intellectual arrest in cases where the age of onset of the acute encephalitis was at the age of three years or earlier.

4. In the affective reactions, depressions were most common. Of these, the reactive type was frequent, especially in cases affected with Parkinsonism. Pictures showing aspects of the manic syndrome were less frequent and less intense.

5. The prevalence of suicidal ideas among the depressive cases was found to be comparatively great.

6. The cases which resembled schizophrenic psychoses were

found to lack the fundamental disturbances of schizophrenia. The only points of resemblances were in the characteristic coloring of the mental content; the accessory rather than the fundamental symptoms were present.

7. Cases with paranoid-hallucinatory states were found to be usually transient, while paranoid states were less frequent and more apt to be persistent.

8. An hallucinatory state in a clear setting was found in one case, whereas fleeting sensory deceptions were more often seen during the course of the disease, especially in children.

9. Impulsive behavior acts were found to occur as isolated phenomena in one case. Repeated compulsion phenomena were also observed. Here it was noted that they early appeared to be due to a psychic cause purely, but the later appearance of neurologic signs showed their probable association with the organic disease.

10. The psychasthenic syndrome which has been described by many authors was represented in these cases.

11. One case demonstrated recurring periods of confusion associated with psychotic symptoms. Especial interest attaches to this type of case because of the indirect evidence that these episodes represent a flare-up of the subacute encephalitic process.

12. The wide diversity of psychiatric pictures following encephalitic infections seems to indicate a non-specificity of mental reaction types in this disease, in contrast to other mental syndromes in organic cerebral diseases.

Bibliography

1. Schilder, P. "Zur Kenntniss der Psychosen bei Chromischen Encephalitis Epidemica. Nebst Bemerkungen über die Beziehung organischer Strukturen zu den psychischen Vorgängen." Zeit. f. d. ges. Neur. and Psych. 118:327: 1929.
2. Powitzkaja, R. S. "Zum Mechanismus der Wahnbildung bei Epidemischer Encephalitis." Zeit. f. d. ges. Neur. and Psych. 116:189: 1928.
3. Jelliffe, S. E. "Mental Pictures in Schizophrenia and in Epidemic Encephalitis, Their Alliances, Differences and a Point of View." Amer. Jour. Psych. 6:413:1927.
4. Langen, A. "Mord nach Encephalitis Lethargica." Zeit. f. d. ges. Neur. and Psych. 95: 506: 1925.
5. Rossi, M. "Les Réactions Médico-légales chez les Encéphalitiques." LEncéphale. 21:399:1926.

6. Kirby, G. H., and Davis, T. K. "The Psychiatric Aspects of Epidemic Encephalitis." Arch. of Neur. and Psych. 5:491:1921.

7. Folsom, R. P. "Mental Symptoms of Encephalitis." Jour. Nerv. and Ment. Dis. 63:154:Feb. 1926.

8. Bonhoeffer, K. "Psychische Residualzustände nach Epidemischen Encephalitis bei Kindern." Klin. Wochen. 2:1446:July 15, 1922.

9. Hohman, L. B. "Post-encephalitic Behavior Disorders in Children." Johns Hopkins Hospital Bull. 33:372:Oct., 1922.

10. Bond, E. D., and Partridge, G. E. "Post-encephalitic Behavior Disorders in Boys and Their Management in a Hospital." Amer. J. Psych. 6:25:1926.

11. Spence, J. C. "Mental Sequelae of Encephalitis." Lancet, 1:280:1925.

12. Ebaugh, F. G. "Neuropsychiatric Sequelae of Acute Epidemic Encephalitis in Children." Amer. J. Dis. Child. 25:89:1923.

13. Marshall, R. M. "Mental Aspects of Epidemic Encephalitis." Jour. of Mental Science. 73:589:1927.

14. Strecker, E A. "Behavior Problems in Encephalitis: A Clinical Study, etc." Arch. of Neur. and Psych. 21:137:1929.

15. Gibbs, C. E. "Behavior Disorders in Chronic Encephalitis" Amer. Jour. Psych. 9:619:1930.

16. Haskover, quoted by Wimmer in "Chronic Epidemic Encephalitis." London, 1924. Page 35

17. Wimmer, August. "Psychotische Syndrome bei der Chronischen Epidemischen Encephalitis." Acta Psych. and Neur. 3:409:1928.

18. Burger, H. "Die Sexualstörungen der Encephalitiker." Allgemeine Zeit. f. Psych. 87:278: Dec., 1927.

19. Staehlin, J. E. "Zur Psychopathologie der Folgezustände der Encephalitis Epidemica." Zeit. f. d. ges. Neur. and Psych. 77:171:1922.

20. Sabrazes, J. "Frigidité et impotence sexuelles dans l'encéphalite épidémique—(part II)." Gazette Hebd. des Sc. Méd. de Bordeaux. 44:205: May 6, 1923.

21. Kauders, O. "Ueber Moriaartige Zustandbilder und Defeckzustände, als Spätfolge von Encephalitis Epidemica." Zeit. f. d. ges. Neur. and Psych. 74:431:1922.

22. Wimmer, A. "Les Troubles mentaux précurseurs de L'encéphalite ëpidémique chronique." Annales Méd.-Psych. 1, 12:306:1925.

23. Stern, F. "Ueber Pubertas Præcox bei Encephalitis Epidemica." Med. Klinik. 18:864:1922.

24. Bromberg, W. "Unusual Sequelae in Chronic Encephalitis." Arch. of Neur. and Psych. 23:194:1930.

25. Schuller and Weygandt. Quoted by Stern, Ibid.

26. Hofstadt, F. Quoted by Stern, Ibid.

27. Kant, O. "Der Geisteszustand (erwachsener) chronischer Encephalitiker." Arch. f. Psych. and Nerv. 72:610:1924.

28. Hoven, H. "Quelques cas de psychoses postencéphalitiques." Jour. de Neur. et de Psych. 27:560:1927.

29. Kirschbaum, M "Ueber Persönlichkeitsveränderungen bei Kindern infolge von epidemischer Encephalitis." Zeit. f. d. ges. Neur. u. Psych. 73:599:1921.

30. Voivenal, P., and Riser, M. "Démence et Encéphalite épidémique." Congrès des Med. Alién. et Neur. de France, Session 26:93: Aug., 1922.

31. Litwack, M. A. "Mal Comitial, troubles sensitivo-moteurs, alexie, agraphie et affaiblessement intellectuel consécutif à une encéphalite épidémique." Rev. Neur. 31:389:1924.

32 Duncan, A. G. "The Sequelae of Encephalitis Lethargica." Brain, 47:76:1924.

33. Hallowell, D. K. "Twenty-four Cases of Acute Epidemic Encephalitis." Psychologic Clinic. 16:167: May, 1925.

34. Hall, A. J. "The Mental Sequelae of Epidemic Encephalitis in Children." Brit. Med. Journ. 1:110:1925.

35. Dawson, S., and Conn, J. M. "Effect of Encephalitis Lethargica on the Intelligence of Children." Arch. Dis. in Child. 1:357:1926.

36. Sherman, M., and Beverly, B. I. "Factor of Deterioration in Children Showing Behavior Difficulties After Epidemic Encephalitis." Arch. of Neur. and Psych. 20:329:1923.

37. Patterson, D., and Spence, J. C. "The After Effects of Epidemic Encephalitis in Children." Lancet. 2:491:1921.

38. Rouquier, M. "Syndrôme dépressif postencéphalitique sans signes de la serie encéphalitique." L'Encéphale. 22:654:1927.

39. Cuel, J., and Cenac, M. "Etat parkinsonien post-encéphalitique et psychose dépressive." Bull. Soc. Clin. de Med. Ment. 11:183:1923.

40. Golant-Ratner, R., and Matusoff, L. "Zur Klinik des Phasenförmigen Verlaufes der Postencephalitischen Geistesstörungen." Monat. f. Psych. u. Neur. 67:311:1928.

41. Wilson, S. A. K. "Modern Problems in Neurology." New York, 1929. Chap. 7.

42. Verger, H., and Hesnard. "L'Etat mental des bradykinétiques encéphalitiques." Jour. de Méd. de Bordeaux. 94:599:1922.

43. Euzière, Blouquier de Claret, et Pages. "Des tendences au suicide chez les parkinsoniens post-encéphalitique." Bull. Soc. de Sc. Med. et Biol. de Montpellier. 4:258:1923.

44. Laignel-Lavastine, Kahn, P. at Bonnard. "Tentative de suicide à caractère impulsif chez un cyclothymique atteint d'encéphalite épidémique." L'Encéphale. 23:333:1928.

45. Trunk, H. "Schizophrene Psychosen bei Encephalitis Lethargica." Zeit. f. d. ges. Neur. u. Psych. 109:495:1927.

46. Gurewitsch, M., and Tkatschew, R. "Beiträge zur Klinik der Chronischen epidemischen Encephalitis." Zeit. f. d. ges. Neur. u. Psych. 99:485:1925.

47. Leyser, E. "Zur Differentialdiagnose metencephalitis und Schizophrenie Storungen." Zeit. f. d. ges. Neur. u. Psych. 99:424:1925.

48. Neustadt, R. "Zur Auffassung der Psychosen bei Metencephalitis." Arch. f. Psych. u. Nerv. 81:99:1927.

49. Steck. H "Contribution à L'Etude des séquelles psychiques de L'encéphalitis lethargica." Schweiz. Arch. f. Neur. u. Psy. 21:214:1927.

50. Guttmann, E. "Schizophrene Psychosen bei Metencephalitis." Zeit. f. d. ges. Neur. u. Psych. 118:575:1929.

51. Burger, H., and Mayer-Gross, W. "Schizophrene Psychosen bei Encephalitis lethargica." Zeit. f. d. ges. Neur. u. Psy. 106:438:1926.

52. Perlmutter, M. "Die Besonderheiten des Grosswahns bei verschiedenen Psychosen." Zeit. f. d. ges. Neur. u. Psych. 121:410:1929.

53. Steiner. "Encephalitische und Katatonische Motilitätstörungen." Zeit. f. d. ges. Neur. u. Psych. 78:553:1922.

54. Bostroem. "Encephalitische und Katatonie Motilitätstörungen." Klin. Wochenschrift. No. 12; 465: March 18, 1924.

55. Stertz, G. "Encephalitis and Katatonie." Monat. f. Psych. u. Neur. 59:121: 1925.

56. Euzière, Blouquier de Claret, Bonnet et Pages. "Démence précoce hébéphréno-catatonique post-encéphalitique." Bull. de la Soc. des Sc. Méd. et Biol. de Montpellier. 4:223:1923.

57. Thompson, L. J. "Encephalitis with Prominence of Hallucinatory Symptoms." Arch. of Neur. and Psych. 6:227:1921.

58. Domarus, E. "Hallucinatorisch-Paranoide Bilder bei Metencephalitis." Arch. f. Psych. 78:58:1926.

59. Bromberg, W. "Narcolepsy Associated with Chronic Encephalitis." Dec. 9, 1929, meeting, Section of Neurology and Psychiatry, N. Y. Academy of Medicine.

60. Kwint, L. A. "Eine Paranoide Variante der postencephalitischen psychotischen Zustände." Arch. f. Psych. u. Nerv. 78:375:1926.

61. Ostmann. "Uber einen paranoiden Folgezustand nach Epidemischen Encephalitis." Allgemeine Zeit. f. Psych. 87:271:1927.

62. Guttmann, E. "Persönlichkeitsveränderung nach epidemischer Encephalitis." Münchener Med. Woch. 73:1650: Oct., 1926.

63. Marchand, Picard et Courtois. "Délire de persécution consécutif à une encéphalite aigüe." Rev. Neur. 35:301: Feb., 1928.

64. Schiff et Courtois. "Encéphalite à forme hallucinatoire." Rev. Neur. 35: 610: April, 1928.

64. Schiff et Courtois. "Encéphalite épidémique chronique à forme de psychose hallucinatoire." Rev. Neur. 35:383:1928.

65. Silk, S. A. "The Mental Reactions in Sequelae of Epidemic Encephalitis." Annals of Clin. Med. 4:117: Aug., 1925.

66. Claude, Tinel et Michon. "Crises paroxystiques anxieuses, hallucinatoires et impulsives d'origine encéphalitique." L'Encéphale. 3:298: Mar., 1929.

67. Claude, Baruk et Lamanche. "Obsessions impulsives consécutives à L'encéphalite épidémique." L'Encéphale. 22:710:1927.

68. Jelliffe, S. E. "Psychologic Components in Postencephalitic Oculogyric Crises, Contribution to a Genetic Interpretation of Compulsion Phenomena." Arch. of Neur. and Psych. 21:491:1929.
"Postencephalitic Respiratory Disorders." 1927; Nervous and Mental Monograph Series, No. 46.

69. Hinsie, L. E. "Psychological Aspects of a Case of Epidemic Encephalitis." PSYCHIATRIC QUARTERLY. 11:363:1925-26.

70. Jones, B. L., and Raphael, T. "Psychiatric Features of So-called Encephalitis Lethargica." Arch. of Neur. and Psych. 5:150:1921.

71. Sands, I. J. "The Acute Psychiatric Type of Epidemic Encephalitis." Amer. J. of Psych. 7:975:1928.

A CLINICAL CLASSIFICATION OF MENTAL DEFICIENCY

BY HOWARD W. POTTER, M. D.,
ASSISTANT DIRECTOR, PSYCHIATRIC INSTITUTE AND HOSPITAL, NEW YORK CITY

For some time the classification of mental deficiency has had as its basis, the level of intelligence. It is quite clear that a classification with such a basis is only quantitative. Clinical experience has shown that there are other important elements that should enter into the classification of mental deficiency because morons often have nothing in common other than the intelligence range, while on the other hand, excepting the intelligence level, a moron and an idiot may both have had the origin of their defect in the same source and by the same pathological process. It is very important to appreciate that the term "mental deficiency" does not represent a clinical diagnosis any more truly than does the term "insanity." Our present system of classification into borderline, moron, imbecile and idiot groups is only another way of saying that the individual is slightly to profoundly deficient. It would be just as rational to classify febrile diseases on the basis of their temperature rise as measured by the clinical thermometer.

The classification proposed in this communication is purely tentative but it is essentially clinical and is the result of a considerable period of time devoted to the clinical study of this problem. The various clinical types may be classified under three main headings designated as *Constitutional Hypophrenia, Reactional Hypophrenia* and *Degenerative Hypophrenia.*

I. Constitutional Hypophrenia

The term "constitutional" is suggested as preferable to the more customary term "primary" because the condition is a part of a general biological inferiority. Seldom do we see a constitutional inferiority involving the field of intelligence alone. In analyzing the entire make-up, physical and mental, of cases of constitutional hypophrenia a variety of deviations may be observed.

1. Deviations in height and weight—almost invariably cases of constitutional hypophrenia will range from one to six inches under the average height. That deficient stature is one of the characteristics of the hypophrenias in general is shown by a study made by

Goddard 17 years ago in which he states that "the lower the grade (of intelligence) the greater the deviation (deficiency in stature and weight) from the normal and the deviations become greater as we advance in age." In a comparative study of hereditary (constitutional) and non-hereditary mental defect made by the writer, it was found that "the heights and weights of patients belonging to the hereditary (constitutional) group were consistently quite below those of the normal for the same ages." Occasionally a definite increase in stature is noted; this is almost invariably associated with a constitutional endocrine imbalance. The deviations in weight essentially parallel deviations in height although on account of frequent deficient pituitary or thyroid states, the weight is apt to be increased over that of the normal or average.

2. Stigmata of ageneration—this term has been borrowed from the more familiar "stigmata of degeneration." It seems that the term "ageneration" is a true indication of what has failed to take place in the individual and that these stigmata are not the result of "degeneration" at least so far as the individual is concerned. As a rule the more severe the constitutional inferiority, the more numerous and the more pronounced are the stigmata of ageneration. These may be classified as follows:

a. Facial asymmetry.
b. Skull asymmetry.
c. Imperfectly formed, irregularly erupted teeth.
d. Gothic palate.
e. Protruding or receding lower jaw.
f. Poorly patterned external ears.
g. Anomalous development of external genitalia.
h. Irregularities of catamenia.
i. Low fronto-temporal hair line.
j. Increased body hair.
k. Infantilism.

3. Endocrine dysfunctions—the most commonly seen are those presenting the clinical picture associated with status-thymico-lymphaticus, hypopituitarism and hypothyroidism. Each of these is essentially constitutional in nature.

4. Personality and mental make-up—in general, such cases are

dull-witted, slow to comprehend, lacking in self-criticism, and display a poverty of ideas. In almost all there is a sense of inferiority. There is but little judgment and common sense and a certain immaturity in foresight and planning.. There is a failure to fundamentally appreciate the environment as a whole. Emotional immaturity and immature personality reactions are almost invariably present. Superimposed on this background may be various secondary personality reaction patterns, the result of inherent drives and environmental influences. The scores obtained by a varied battery of psychometric tests are appreciably below the expected norm and tend to be reasonably uniform. One or two test scores, disproportionately high or low, may be encountered, suggesting a special ability or disability.

There are a variety of clinical types of constitutional hypophrenia, as follows:

A. *Familial Type*

This type refers to those cases where there is reasonably definite evidence of a direct relationship between the existent hypophrenia and mental deficiency in the direct or immediate collateral ancestry. Such cases are usually of the moron or borderline level, sometimes of the imbecile level but rarely of an idiot level.

B. *Mongolian Type*

This is a clinical type of hypophrenia originally described by J. Langdon Down in 1866. Its etiology is not clear but it appears obvious that it is a constitutional condition. Clinical cases of mongolism are usually of the idiot or imbecile level. They have a rounded skull, flattened posteriorly, oblique and narrow palpebral fissures, often with a reduplication of the inner canthus, depressed nasal bridge, transversely fissured tongue, short, stubby hands with spreading, tapered fingers, paddle-shaped feet with a gap between the first and second toes, and hyperextensible joints.

C. *Congenital Diplegic Type*

This is a condition characterized by a bilateral rigidity involving all voluntary musculature and impoverishment of intelligence. The rigidity tends to be distributed evenly with reference to the two sides of the body but is commonly more pronounced in the

lower extremities with marked spasticity, contractures and adductor spasm. The skull is small and a general state of underdevelopment is usually in evidence. The etiology is obscure but the indications are that the condition represents a biological inferiority. A defect in myelinization is probably present in many cases. The intelligence defect is commonly most profound. It is differentiated from the post-traumatic (birth injury) conditions by the distribution of the neurological signs and symptoms. These are usually unilateral in the post-traumatic cases whereas in the congenital diplegias they are always bilateral. The intellectual defect is usually not so profound in the post-traumatic condition.

D. *Microcephalic Type*

This is a condition of cerebral hypoplasia of constitutional origin characterized by a small skull with a sharp recession of its frontal part beginning just above the supraorbital ridges and sloping severely backwards to the occiput. The scalp is usually wrinkled in an antero-posterior direction as the skull is not of sufficient size to fill its covering. There is almost always present a markedly diminished stature with no striking disproportions. Microcephalics are usually of an imbecile level of intelligence. This condition has been reported to have occurred in several instances following irradiation of the pregnant uterus.

E. *Oxycephalic Type*

This is a somewhat uncommon clinical type characterized by an abnormally high, narrow skull coming to a point at the occipital vertex. The characteristic shape is due to a premature synostosis of the coronal and saquittal sutures. There is usually more or less exophthalmos with optic atrophy. The X-ray findings show definite evidence of increased intracranial pressure and synostosis of the coronal suture. The intellectual defect may not be especially severe, seldom lower than the high grade imbecile level and usually of the low or medium moron level. Although this condition is classified here as a constitutional type of hypophrenia there are indications that it is closely related to an inflammatory reaction of the meninges. Should this be definitely established it would not be proper to regard it as a constitutional type.

F. *Cretinous Type*

Cretinism, a condition characterized by a deficiency in the thyroid secretion accompanied by characteristic physical and mental changes, is not especially common in its most pronounced form. The growth is much delayed, the stature is extremely short with disproportionately shortened extremities and the hands and feet are short and broad with stumpy blunted digits. The nose is broad and flattened, the lips thick, the abdomen protuberant, and the skin is dry and myxedematous with dry wiry hair. The intellectual defect is directly dependent on the severity of the thyroid insufficiency, the majority of untreated cretins being usually of the idiot or low grade imbecile level. Milder forms of cretinism, so-called hypothyroidism, are not uncommonly seen as a constitutional syndrome and in these cases the physical characteristics and the intellectual deficiency are not so pronounced.

G. *Hypophyseal Type*

The hypophyseal type comprises those cases with a definite insufficiency of pituitary functioning and showing the characteristic dystrophia adiposo-genitalis, the syndrome described by Froelich. Physically such cases are much under the average height, there is a more or less marked genital hypoplasia with inversive characteristics, and there is a peculiar distribution of subcutaneous fat especially prominent over the pectorals, scapulae, abdomen and lumbar regions. The extremities are apt to lack their characteristic shapeliness due to excessive deposits of fat at the elbows and wrists, knees and ankles. The hands are fat and the fingers short and tapering. Mentally such cases are usually of the high grade imbecile and low grade moron level. The condition is undoubtedly constitutional in nature and one frequently sees other members in the family with endocrine dysfunctions.

H. *Hypoplastic Type*

This type includes those cases which show a rather widespread hypoplastic condition. The observable signs and symptoms do not refer especially to any one gland of internal secretion. The clinical picture is usually that of a thymic sub-involution associated with some indications of a pituitary or thyroid insufficiency or both.

The blood pressure is usually abnormally low and the external genitalia poorly developed with a tendency to show inversive characteristics. The mental level may vary but ordinarily such cases range from a high grade imbecile level to a high grade moron level.

I. *Constitutional Syphilitic Type*

Under this heading are placed those types of hypophrenia in which there is definite evidence of a parental syphilis. The case in question may or may not show evidence of a direct prenatal syphilitic infection; at all events they are free, according to serological and neurological evidence, from a direct infection, as such, of the central nervous system. Maternal syphilis is much more apt to give rise to cases of this type than paternal syphilis. There is usually found a high biological mortality of the siblings of the patient. The story is often that of miscarriages, stillbirths, postnatal deaths, hypophrenia and then possibly normal children in the offspring of the untreated syphilitic mother.

The mental level of such cases tends to range through the imbecile and moron grades.

The condition is essentially constitutional, apparently resulting from the blastophoric effect of the syphilitic infection on the germ cell.

Considerable care is necessary in differentiating this condition from other cases of hypophrenia in which the syphilis is simply coincidental. Ordinarly, when the mental level of the patient is appreciably impaired below that consistent with the general mental level of the stock and there is no evidence of a luetic cerebral infection, then the indications are that we are dealing with a constitutional syphilitic type. On the other hand, when the mental level of the case is not appreciably different from the general mental level of the stock, it is reasonable to conclude that the syphilis is mainly coincidental.

J. *Undifferentiated Type*

In this group are placed those cases of a constitutional nature who are not sufficiently distinctive in their clinical characteristics to be classified as any of the foregoing types. Many of these are of the imbecile level of intelligence but several may be of a moron level as well.

It is to be emphasized that among the clinical types of constitutional hypophrenia the familial type only has a heredity characterized by mental deficiency. One or another of the other clinical types may have a history of a psychosis in the family but there seems to be no direct evidence that a psychosis as such gives rise to a mental defect in the offspring in as direct a fashion, at least, as does mental deficiency. On the other hand, the presence of a biogenetic psychosis in the immediate ancestry may be of some biological significance with respect to its being a forerunner of a more marked constitutional neuropathy such as constitutional hypophrenia represents.

II. Reactional Hypophrenia

The term "reactional" seems preferable to the more commonly used term "secondary" as it implies specifically the nature of the underlying pathogenetic mechanism. Reactional hypophrenia is not pre-determined by the constitutional endowment but is the result of the organic reaction of a perfectly healthy, normally developing organism to mechanical, chemical or bacterial factors in the environment. Like constitutional hypophrenia, however, reactional hypophrenia but rarely shows the end results of the environmental insult in the intellect alone; there is usually very definite evidence of damage in other phases of the mental and physical make-up as well.

Cases of reactional hypophrenia usually have an irritable, emotionally unstable, personality. A general hyper-irritability is quite common. In many cases it seems that the intelligence defect is dependent upon a destruction of certain pathways providing for the expression of intelligence.

A. *Post-Traumatic Condition*

In such cases the hypophrenia is directly dependent upon a cerebral lesion resulting from an injury. Such cases are apt to show a unilateral rather than a bilateral distribution of neurological signs and symptoms. Post-traumatic conditions with hypophrenia may follow severe head injuries with evidence of intracranial pathology at the time of injury and may occur during birth or at any time during childhood. Usually the younger the child is at the time of the injury, the more serious is the intelligence defect. Recurrent convulsive phenomena are frequently a part of the symptomatology.

B. *Post-Encephalitic Condition*

Post-encephalitic conditions with hypophrenia may result from an encephalitis of various infectious origins. An encephalitis may be a concomitant condition of any of the acute infections of childhood such as measles, scarlet fever, pneumonia, etc. It is also seen as a distinct entity, encephalitis lethargica. An encephalitis may also be a complication of meningitis and acute anterior poliomyelitis. It is probable that hypophrenia occurs as a sequella of meningitis only when the meningitis has been complicated by an encephalitic process in addition to the meningeal involvement. The earlier the occurrence of an encephalitis the more pronounced is the intelligence defect likely to be. Many post-encephalitic cases do not necessarily present any outstanding neurological signs but the disorder is especially marked by personality changes and a lack of emotional control together with varying degrees of hypophrenia. When neurological signs are present they usually refer to a basal ganglion involvement with a clinical picture of the characteristic Parkinsonian syndrome.

C. *Hydrocephalus*

Internal hydrocephalus is almost always secondary to inflammatory conditions about the aqueduct of Sylvius, the foramina of Luschka and Magendie, and the sub-arachnoid basal cisterns. Dandy has shown that obstructions to the free circulation of the cerebro-spinal fluid at any one of these points will result in a distention of the ventricles. Internal hydrocephalus so frequently represents a part of a total inflammatory reaction that it is set aside as a special type in this classification only because of its frequent occurrence as an outstanding clinical condition. The more severe the hydrocephalus the more profound is the intellectual defect and the physical incapacities. It is characteristic for hydrocephalics to show bilateral evidences of pyramidal tract irritation. Many of the less marked cases go unrecognized. The globular inverted pear-shaped cranium is as characteristic as is the enlargement. In doubtful cases signs of increased intracranial pressure may be found by use of the X-ray, opthalmoscope, and reflex hammer. Only very rarely does internal hydrocephalus represent a developmental anomaly and it is then usually accompanied

by spina bifida, encephalocoele, etc. Such cases are usually seen only by the obstetrician as they rarely survive for more than a few days or weeks at the best. External hydrocephalus is rarely diagnosed in life as it does not produce symptoms and merely represents a means of filling up intracranial space resulting from cerebral defects which otherwise would have been filled by healthy cerebral tissues.

D. *Infantile Cerebral Syphilis*

In children suffering with infantile cerebral syphilis one of the symptoms may be concerned with a deficiency of the intelligence. The pathological process may be meningo-vascular or parenchymatous in nature. Those cases with meningo-vascular processes predominating frequently present hemiplegias. Those in which the process is largely of a parenchymatous type, often present only isolated neurological signs detectable only through a very careful and detailed neurological examination. The intellectual defect varies in its severity, being dependent upon the location and extent of the lesions. Extremely slow, yet progressive intellectual deterioration is the rule. Psychotic manifestations are rarely if ever seen. Characteristic serological changes are always present in the spinal fluid and the blood Wassermann may or may not be positive.

III. Degenerative Hypophrenia

There are certain cases of intellectual defect more or less rare in their occurrence, which neither represent a part of a general constitutional inferiority nor the end result of a reactive condition. They are dependent on progressive degenerative changes in the central nervous system.

A. *Diffuse Sclerosis*

Histologically the picture is that of a diffuse or patchy proliferation of neuroglia throughout the cortex. The condition is probably essentially neoplastic in nature and closely related to the gliomas. Clinically there is progressive mental deterioration with fine tremors increased by volition or emotional tension, increased deep reflexes and general muscular weakness with no actual paralysis. The onset is early, before the age of 5, and such cases rarely survive beyond the second decade of life.

B. *Nodular Sclerosis*

The fundamental histological nature of this condition is probably the same as that of diffuse sclerosis but the neuroglia proliferation is nodular in character and there are tumors (adenoma sebaceum) in the skin and teratomatous or mixed tumors in various of the internal organs (kidney, spleen, liver, thyroid, etc.). The condition begins early, before the age of 5, and is characterized by progressive mental deterioration, adenoma sebaceum about the naso-labial fold, and recurrent convulsions. Death usually ensues before maturity is reached.

C. *Amaurotic Degeneration*

1. Early Form. The onset is characterized by muscular weakness and visual difficulties beginning at about the third month of life. The optic atrophy rapidly progresses, as does the muscular weakness and a rapid mental deterioration ensues. Deep reflexes are hyperactive and a generalized muscular rigidity is present in the latter stages. The condition is usually found to have occurred in other members of the family. Histologically there is a progressive deterioration and disintegration of ganglion cells in practically all regions of the central nervous system where ganglion cells are normally found.

2. Late Form. Histologically this form is essentially the same as the early type. The onset, however, is later, about the fifth year, and the course is slower, death ensuing during the second decade of life. The clinical symptoms are those of the early form, failing vision and muscular weakness usually marking the onset.

NOTE: In using this classification for recording diagnoses it is suggested that the following order of descriptive or diagnostic terms be used.

a. Main group.
b. Clinical type.
c. Mental level.
d. Personality type (adaptive, emotionally unstable, inadequate, egocentric, paranoid, etc.)

Examples: Constitutional hypophrenia, Mongolian type, low grade imbecile level, inadequate personality.

Reactional hypophrenia, infantile cerebral syphilis, high grade imbecile level, emotionally unstable personality.

Summary

I. Constitutional Hypophrenia—a general biological inferiority with evidence of defect, deficiency, or anomalous development in various phases of the mental and physical make-up. Such evidences are found in deviations of height and weight, "stigmata of ageneration," endocrine dysfunctions, personality traits and state of emotional maturity, and intelligence test results.

A. Familial type.
B. Mongolian type.
C. Congenital diplegic type.
D. Microcephalic type.
E. Oxycephalic type.
F. Cretinous type.
G. Hypophyseal type.
H. Hypoplastic type.
I. Constitutional syphilitic type.
J. Undifferentiated type.

II. Reactional Hypophrenia—a state of defect in various phases of the mental and physical make-up resulting from the organic reaction of the normally developing organism to mechanical, chemical or bacterial factors in the environment.

A. Post-traumatic condition.
B. Post-encephalitic condition.
C. Hydrocephalus.
D. Infantile cerebral syphilis.

III. Degenerative Hypophrenia—A progressive degeneration of the histological structures in the central nervous system, not associated with a general constitutional inferiority and not resulting from infectious or other similar factors.

A. Diffuse sclerosis.
B. Nodular sclerosis.
C. Amaurotic degeneration.
    1. Early form.
    2. Late form.

Comment

It is not the intention of the writer to submit this classification as final. If this communication serves to create a more fundamental clinical attitude toward the problem of mental deficiency and assists in crystallizing a more suitable scheme for a clinical classification of the various kinds of conditions which are characterized by hypophrenia, its purpose will then have been fulfilled.

BRAIN TUMORS*

Their Pathology, Symptomatology, Diagnosis and Prognosis

BY LEO M. DAVIDOFF, M. D.

PART III

SYMPTOMATOLOGY

General Symptomatology

The peculiar physiological conditions within the cranial cavity call forth symptoms in the presence of a new growth which are unique as compared with tumor symptoms elsewhere in the body. It may be recalled briefly that the cranium is a rigid, bony box in which the largest opening is the foramen magnum. It is partially divided off into compartments by the tentorium and falx cerebri. It contains not only the sensitive cerebral tissue in which localized function, some of it vital, is highly specialized, but also the cerebrospinal fluid system, the pressure of which must be maintained in equilibrium with the arterial and venous pressure at a level compatible with health.

In consequence, any expanding lesion, by encroaching upon the limited space within the cranium, or blocking the cerebrospinal fluid outflow, may give rise to one set of symptoms due to increased intracranial pressure—the general symptoms; and another group of symptoms depending upon the location of the tumor and the part of the brain which it displaces, destroys, or cuts off from its blood supply—the local symptoms. A few tumors exist without any symptoms, and are discovered accidentally at autopsy. Some tumors have only, or mostly, general symptoms; others show focal symptoms with few or no general symptoms; but most brain tumors have both types sooner or later in their course. The rapidity with which increased pressure in the cranium develops, and the degree it attains is undoubtedly largely dependent upon the site of the tumor. Thus the pressure increases most rapidly and to the highest degree in midbrain tumors, and in subtentorial growths. Other things being equal, it is least marked in frontal lobe tumors, somewhat more marked in parietal lobe tumors and still more so in occipital lobe

* Parts I and II have appeared in previous numbers of THE PSYCHIATRIC QUARTERLY.

tumors.[186] It is usually believed that this variation of increase in pressure, associated with the location of the tumor, depends upon the degree of speed with which a tumor in any given situation can block the exit of the cerebral fluid from the ventricles. According to this view it is obvious that a midbrain tumor obstructing the aqueduct, or a cerebellar tumor closing the foramina of Luschka and Magendie, would be the first to produce an obstructive hydrocephalus with resulting increase of pressure.

Recently, however, Stopford[186] has taken issue with the accepted beliefs in this matter and stresses the factor of increased production of cerebrospinal fluid as an important one in the development of increased intracranial pressure. Basing his views upon Dandy's experiment in which he was able to produce hydrocephalus by closing off the veins of Galen, thus increasing the cerebrospinal fluid output by back pressure through the capillaries, Stopford has demonstrated anatomically the course of the veins of Galen and their tributaries as a sharply curved one around the splenium of the corpus callosum. He believes that either by the pushing of the tentorium upwards by a tumor of the posterior fossa, or the pulling of the tentorium upwards by a lateral displacement of the falx cerebri, the veins of Galen can become compressed against the splenium with a consequent increase in the pressure within the choroid capillaries, an increase in the fluid formation, with a resulting hydrocephalus. He presents very interesting facts in support of his theory. For example, the least increase in intracranial pressure with supratentorial growths, judging from his figures, is in the case of frontal lobe tumors, while the severest increase occurs in association with occipital lobe tumors. This he would interpret as depending upon the great width of the falx in the occipital region, making its displacement in this area much more likely, and the narrowness of the falx in the frontal region where pressure could easily be exerted across the midline without disturbing the falx.

It is more than likely that both obstruction to the outflow and increased production of the cerebrospinal fluid play a part in the secondary hydrocephalus which is, to a greater or lesser degree, responsible for the increased intracranial pressure associated with brain tumor.

Every now and then, however, unequivocal evidence of one of these factors alone as responsible for the increase in pressure is deducible from case reports. This is especially true of rare tumors which block the foramen of Monro and produce unilateral or bilateral distention of the lateral ventricles alone. Bramwell[29] cites an excellent example of such a case in which death followed upon the obstruction of the foramen of Monro by a simple cyst of the choroid plexus.

The factor next in importance to the location of the growth in the production of increased intracranial pressure is the character of the tumor. Thus a benign meningioma growing very slowly over a period of many years may accommodate its bulk in the cranial cavity, by the steady re-equilibration of pressure, through the atrophy of brain substance, increase in absorption of cerebral fluid, etc., and attain very large size without producing any considerable risen intracranial pressure. On the other hand, the fulminating growth of a malignant glioma may, through the abrupt addition of intracranial bulk, bring about death of the patient by pressure on the vital centers of the medulla in the course of three or four months.

The symptoms indicative of increased intracranial pressure, that is, the general symptoms associated with most brain tumors are covered chiefly by the triad—headache, vomiting and papilledema. Other symptoms such as dizziness, mental disturbances, convulsions, more rarely heart and respiratory disturbances, temperature changes, sphincter disturbances, rhinorrhoea, even amenorrhoea may at times be due to an increase in intracranial pressure.

Headache. It is possible in many ways to prove that headache associated with brain tumor is due to stretching applied to the dura as a result of increased intracranial pressure. In the first place it is known from intracranial operations, done under local anaesthesia, that the cerebral substance is insensitive, while the handling of the dura, especially along the blood vessels, can be intensely painful. Then we know that any stimulus exerted to raise intracranial pressure, such as excitement, shouting, coughing, sneezing, physical exertion, alcoholism, straining, etc., will intensify or bring on a headache in a brain tumor patient. On

the other hand, decompression or shrinkage of the brain by the administration of hypertonic solution almost always relieves it.

The headache is the most constant and usually the most disagreeable symptom of brain tumor. It is often generalized, deep-seated, dull in character. While it may be mild, especially early in the disease, it is often so severe that it has, on occasion, led to suicide. As the pressure increases the sharp edge of pain may become dulled by the coincidental dulling of consciousness, but even in semi-coma the sufferer may be observed holding his head in both hands with an agonized expression upon his face. It seldom yields to ordinary analgesic drugs, and the administration of morphia is dangerous owing to the already precarious state of the respiratory center from the generalized increase in pressure. While the ache, especially early in the disease, may be intermittent, it is often continuous with periods of exacerbated intensity. Sometimes one sees cases with bouts lasting hours to several days of the severest kind of headache, vomiting, and finally coma which may be falsely diagnosed as migraine. Bruns[31] speaks of such experience with several cases of cysticercus of the fourth ventricle. The cysts in these cases may have acted as ball-valves periodically closing off the aqueduct of Sylvius (Brun's syndrome). The intensity may vary with the time of day, frequently showing an increase toward morning, or immediately on arising.

There is seldom anything characteristic about the location of the headache. It is often generalized; its location may vary from time to time, or it may be more or less confined to the forehead, the vertex, the temporal, or the occipital regions. Perhaps the commonest location is in the frontal region. The part of the head affected by the ache should generally not be taken to be of localizing significance, certainly not alone, for cerebellar tumors as often cause frontal headaches, as do frontal growths. On the other hand, suboccipital headache, associated with tenderness and rigidity of the nucal muscles, is significant in the localization of cerebellar tumors. Indeed, wherever pain exists locally, perhaps in addition to generalized headache, with associated tenderness to pressure and percussion, it may serve, in association with others as a significant point in localization of the lesion.

Vomiting. Although not so frequent as headache, vomiting is a very common occurrence in brain tumor cases. It may be an early symptom, but usually appears only after headaches have been present for a considerable period of time. There is usually no difficulty in recognizing the cerebral, rather than the primarily gastric, disturbance underlying the vomiting. Although not altogether unassociated with nausea, the latter is usually minimal. The projectile character of the vomiting is sometimes read into the history by the attending physician, but often actually exists and may be very marked. The vomiting frequently comes at the height of a severe headache, and occasionally brings relief to the latter, so that patients sometimes induce vomiting by inserting the finger into the pharynx.

The cause of vomiting in increased intracranial pressure is undoubtedly the irritation of the vomiting center in the medulla oblongata by pressure resulting from the herniation of the cerebellar tonsils through the foramen magnum. This is naturally most marked in tumors of the posterior fossa. In these cases especially, vomiting is likely to occur in the morning after the patient changes from a reclining to a sitting position, when evidently the already excessive pressure upon the medulla is aggravated by gravity.

Papilledema. The most important symptom of brain tumor is the swelling of the optic discs. While the possible causes for headache and vomiting may number legion, Oppenheim[152] estimates that at least 90 per cent of all cases of papilledema are due to brain tumor, and that about 90 per cent of brain tumor cases sooner or later show "choked" discs. More recently, Van Wagenen[195] also found 89.3 per cent of 145 consecutive cases of verified brain tumors associated with choked discs at the time of examination. The controversy as to whether papilledema is an inflammatory condition resulting from a toxin produced by the tumor, or whether it depends upon a purely mechanical cause, is now of historical interest only, since neurosurgeons have long ago repeatedly shown that decompression even without removal of the tumor (*sic* the source of the toxin) results in the subsidence of the swelling of the optic disc. It was a timely demonstration, however, when in 1909 Cushing and Bordley[64] showed that choked discs can

be produced experimentally by distending the optic sheaths with fluid, or by introducing into the cranial cavity bodies simulating tumors and thus forcing the fluid contents of the cysternae about the infundibulum into the sheaths by the increased intracranial pressure. The result of the pressure upon the optic nerve by the distended sheath may produce a stasis within the central veins of the nerve head, or the distending fluid may itself find its way through lymphatic channels into the neuroretinal tissue and produce edema, or what is more likely, both effects may contribute to the swelling.

The appearance of the papilledema depends upon its age. In its earliest stages no measurable elevation of the disc above the retina is present. The change is characterized simply by the change in color from the normal pink to a grayish-red. The margins of the nerve-head become obscured; the veins dilate and become tortuous, while the arteries remain narrow. As the process advances the surface of the disc rises above the level of the retina, the color becomes more intensely red, the margin disappears altogether and is marked only by the looping of the distended veins over the region where the edge was formerly located. The arteries are buried in the edematous tissue and are usually visible only in the periphery of the retina. At this stage hemorrhages and exudate appear in the retina. The swelling may reach an elevation of eight or even ten dioptres.

The edema may remain unchanged for weeks and even months until the death of the patient; following decompression, rarely spontaneously, it may subside with very little residue; or it may result in secondary atrophy. The latter sets in gradually, the swelling slowly subsides, and the disc margins return to view. Finally when the process becomes stationary the disc is pearly gray or white in color, the margins sharp, the arteries very narrow; the veins, however, often remain dilated. Without a knowledge of the previous history of the case this secondary atrophy is sometimes difficult to distinguish from a primary one.

This whole cycle may complete itself in a few weeks or last a period of many months. Experience has taught that the effect upon vision of the duration of papilledema cannot always be prog-

nosticated. It is a safe rule, however, that the sooner pressure is relieved, the likelier will be complete restoration of vision.

Since papilledema is due to increased intracranial pressure, the corollary follows that its time of appearance and intensity will depend upon the same factors as the increased pressure itself. Thus midbrain and posterior fossa tumors will be accompanied by earlier and more intense papilledema than supratentorial growths, although here, as in the other symptoms so far enumerated, the presence of a high degree of choked disc alone cannot be the basis of a localizing diagnosis.

Ever since van Graefe, in 1859, recognized the relation between choked disc and brain tumor the controversy has been rife as to whether unequal degrees of edema in the two eyes or unilateral edema are significant in lateralizing the tumor. The consensus of latest opinion seems to be that it is not, except in certain special tumors associated with choking on one side and primary atrophy in the other, which will be discussed further on.

Mental Symptoms. Practically all patients with brain tumor show a certain degree of mental impairment in the form of apathy, defective attention and concentration, dullness of intellect, and slowness of response. In the later stages dementia, drowsiness, stupor and coma supervene. Schuster[176] in 775 cases of brain tumor with mental symptoms, collected from the literature, found 423 to show such changes. The remaining 352 manifested states resembling other psychoses such as "epileptic character," maniacal and similar states, melancholia or milder depression, confusion and hallucinatory delirium, symptoms resembling those of general paresis, euphoria, moria, hypomania, chronic paranoia, symptoms resembling those in neurasthenia and hysteria, etc.

Baruk[22] in a very thorough recent study of 55 personally observed cases, concludes that the most important factor in mental disturbances of patients with brain tumor is the accompanying increased intracranial pressure which causes disturbances in the state of consciousness. Other mental symptoms depend upon location of the tumor. In frontal tumors the psychic changes may come first and dominate the picture throughout, resembling sometimes the mental state in general paresis. Affective changes, moral perversions, etc., may be seen. This is largely also true

of tumors of the corpus callosum. In basal tumors, changes in habits of sleep are prominent symptoms. Somnolence is characteristic of all basal tumors; true sleep, especially of those in the region of the infundibulum and tuber cinerium. These patients are likely to resemble those with encephalitis lethargica. Tumors of the parieto-temporo-occipital region may show aphasia, apraxia, agnosia and sensory hallucinations.

It seems nevertheless true, as Bruns,[31] Gordon[99] and others believe, that specific psychoses in individuals with brain tumor are often unassociated with the growth except in so far as the latter is instrumental in precipitating a potential psychosis in a sensitive person. The fact that so few brain tumors occur among psychotic patients is in itself evidence that tumors are not among the important causative agents of specific types of psychoses.

Convulsive Seizures. Local or Jacksonian seizures are usually indicative of a tumor situated in the cerebral area controlling the muscles involved in the fit. Generalized convulsions, resembling idiopathic epilepsy, however, also occur in brain tumor cases and may be regarded as evidence of increased intracranial pressure in these cases. While fits are quite common in brain tumors, they ordinarily occur late in the disease when other signs of tumor are already well advanced. Cases are known, however, in which generalized convulsions preceded other symptoms. Indeed, this occurs sufficiently often so that one must, among other things, think of brain tumor in patients who present the picture of epilepsy beginning in later life. MacRoberts and Feinier[139] are inclined to suspect the temporal lobe as the seat of a tumor unassociated with localizing symptoms and presenting, among other general symptoms, convulsions. Their explanation is that tumors situated here compress the middle cerebral artery and thus cause irritation by anemia of large areas of the brain.

As a rule, after Jacksonian fits have been present for some time, generalized seizures become associated with them. Bruns reports an interesting case in which this relationship was reversed. The patient who had had generalized attacks for years developed localized seizures in the facial muscles, and at autopsy a tumor was found in the contralateral cerebral hemisphere at the foot of the second and third frontal convolutions. Instances are also

known of generalized pressure giving rise to local fits. Thus Collier[38] reports two cases with Jacksonian seizures in which the tumor was found at autopsy in both cases to be located in the cerebellum.

Signs of Medullary Compression. Under this heading we may include lowering of the pulse-rate, irregular, often Cheynes-Stokes variety of breathing, frequent yawning, hiccough, and perhaps also the very marked terminal hyperpyrexia without accompanying infection. Many of these symptoms are seen most frequently with tumors of the posterior fossa, but that is simply because intracranial pressure is usually highest with tumors in this location. A growth of the supratentorial region may also provoke any of these if it causes sufficiently great increase in the tension within the skull.

Rhinorrhoea. A discharge of cerebral fluid from the nose may supervene upon a marked secondary hydrocephalus associated with increased intracranial pressure. The pathway to the nasal cavity is through a defect in a thinned cerebral cortex connecting the ventricles with the subarachnoid space, and a separation of the interlacing fibres of the dura overlying the cribriform plates.

Focal Symptomatology

Much depends upon the history, the mental state of the patient, the accuracy of the family physician's memory, the stage of the disease at which the patient comes under observation and many similar extraneous elements, as to whether we can elicit in any given case some of those factors which, the diagnosis of brain tumor having been made, assist us in further diagnosing its location.

Certain cases, will, even upon the closest study, fail to yield any evidence about the location of the growth. These may be cases of tumors in the depths of the white substance which displace, but which for some time after the onset of generalized symptoms do not destroy the brain tissue. Tumors located in the so-called silent areas especially the right temporal and certain parts of the right frontal lobe, often are unlocalizable. Finally certain very large tumors, especially above the tentorium, may cause such marked general symptoms that focal symptoms become obscured, or false

local symptoms resulting from pressure at a distance arise. This lies at the root of Brun's aphorism that "localization of a tumor on the basis of focal symptoms is the more certain, the less marked the general symptoms are, that is, the smaller the tumor."

Owing to the distant effect of cerebral disturbance, the armamentarium of inspection, palpation, percussion and auscultation belonging to the medical examiner of other regions of the body is not often locally applicable in cases of brain tumor. These time-honored methods are not, for this reason, entirely to be neglected. The writer is acquainted with at least one case in which the puzzling seat of the tumor was disclosed on the morning of operation after the head was shaved, and locally dilated and tortuous veins of the scalp became witnesses of the underlying neoplasm. Exostoses, pulsations, local bruit, local tenderness, may all be picked up on occasions if the head is systematically examined in each case, and these findings are, when found, extremely important especially as confirmatory of other localizing signs.

Frontal Lobe. The recognition of symptoms associated with the disturbance of function of a given part of the brain is dependent upon a knowledge of the normal function of that part. For this very reason the localization of disturbances in the frontal lobes is extremely unsatisfactory. These lobes comprise the part of the brain from the frontal tips to the precentral convolutions. The anterior part of the frontal lobes—the prefrontal areas, fail to respond to electrical stimulation, and owing to their excessive development in man, as well as some evidence from pathological material other than brain tumors, are believed to be in control of intellectual activity. Arising in some of the cells of the prefrontal region are the fibers of the frontopontine tract, the exact function of which is as yet not determined with certainty. The postfrontal areas have been shown by Vogt and by Foerster to respond to electrical stimulation with a rotation of the eyes and head toward the contralateral side. On the left side, at the base of the third frontal convolution is Broca's area which is connected with the motor component of speech. On the under surface of the frontal lobes are the olfactory and optic nerves, and adjacent to the posterior aspect of the frontal lobes are the motor convolutions with the projection tracts arising in the motor cells.

Symptoms of brain tumor occurring in the frontal lobe may be both general and focal. It is characteristic of the former, however, that they may appear late, especially is this true of papilledema. This sign may be absent, and when present may be more marked on one side or even confined to one side, frequently, although not exclusively on the side of the tumor, and may be relatively mild in degree. Müller,[147] who studied 164 cases found only 6 per cent free from headache, the remaining ones usually had frontal headache and some showed local tenderness over the painful area.

Such focal symptoms as can be of service in localization of frontal lobe tumors correspond to the little known functions of this brain area. Thus, corresponding to the supposed intellectual activities of the frontal area, mental disturbances are frequently found. In Oppenheim's opinion the majority of cases with frontal lobe lesions show mental abberations upon careful study. The character of these changes is often too subtle to be recognized by the family of the patient and by the physician who has not known him before the onset of the illness. It may consist of an alteration in temperament and disposition. Vincent[197] and Puusepp[159] emphasize a lack of interest, a want of judgment and sense of proportion, a loss of the sense of responsibility and a deficient memory. Some impairment of emotional control, and notably an inappropriate hilarity, is a peculiar feature which characterizes certain cases; the patient's speech may be foolish and silly. A general lowering of the moral standard is not infrequent. Not uncommonly there is a blunting of the mental faculties, amounting, it may be, to a dementia, while other cases manifest a definite psychosis. Schwab[177] is particularly impressed by the changes in *personality,* a concept, which is in itself difficult to define.

Courville[40] brought out the fact that auditory hallucinations, although infrequent in brain tumors, when they do occur, are associated with either frontal or temporal neoplasms. Those associated with temporal lobe tumors are usually accompanied by hallucinations of sight, smell, taste, as well as other mental changes, while in the case of frontal growths the mental picture may have various features, but not of additional hallucinatory character.

Ikutard[119] as well as Kubitchek[131] feel that mental symptoms

are neither frequent in occurrence nor specific in character in frontal lobe tumors. Conversely, in the presence of other symptoms, a history of early development of mental changes is very suggestive of a frontal location of the growth.

The presence of motor speech defects is, of course, extremely helpful in the diagnosis of frontal lobe tumor. This occurs, however, only in those limited cases which involve Broca's area on the left side (right side in left-handed individuals). This impairment may amount to complete motor speech loss without much or any change in sensory speech functions. It may amount to difficulty in finding words, stuttering, hesitancy or slowness in speech. The speech defect may be accompanied by agraphia.

Convulsive seizures occur in about one-third to one-half of cases with frontal lobe tumor. Ikutaro calls attention to the late occurrence of fits in tumors located frontally. The character of the seizure is usually generalized although focal fits are not uncommon. Both Müller[147] and Grainger Stewart[185] call attention to seizures beginning with, or limited to, a deviation of the eyes and head toward the side contralateral to the lesion. In this connection Dr. Gordon Holmes in a discussion of a paper by Ernest Sachs[168] remarked that he has frequently seen hesitation in turning the eyes toward the side opposite the lesion on the part of the patient when faced by the examiner who commands alternately "eyes right,!", "eyes left!" This he believes is due to the involvement of the *adversiv Feld* of Foerster. Seizures due to frontal lobe tumors may also begin by a loss of speech and may be followed by temporary aphasia, as well as temporary deviation of the eyes and head toward the side opposite the tumor.

Involvement of the pyramidal tract may be very gross—in case of a large tumor—resulting in definite hemiparesis. Much more frequently the signs are very slight. T. G. Stewart[184] found a loss of the superficial abdominal or epigastric reflexes on the side contralateral to the tumor even before any increase of deep reflexes or change in the plantar toe response. Sachs[168] was also able to demonstrate a loss or diminution of the contralateral abdominal reflexes as well as a slight contralateral supranuclear facial paresis in nearly all of his 25 cases. An observation made by Schuster and by Stiefler has been elaborated by Adie and Critch-

ley[2] who found three cases of frontal lobe tumors in which the patients were forced to grasp and hold an object in the hand if it were stroked across the base of the fingers. Any attempt to withdraw the object, for example the examiner's finger, caused the hand to close more firmly over it. The tumors in these cases were located at, or involved, the foot of the first frontal convolution, and the authors believe that this reflex is due to a "disturbance in a constellation of cortical mechanisms whose influence upon spinal centers is exerted through the pyramidal tract as a final common path."

Disturbances of coordination of muscular movements, of equilibrium, of the proper "integrative action of the nervous system" have often been observed in frontal lobe tumors. These frequently are the cause of difficulties in differentiating between frontal and cerebellar growths. T. G. Stewart calls attention to a fine tremor of the outstretched arm or leg on the same side as the tumor as a very frequent sign (18 out of 22 cases of frontal lobe tumor). Bruns assumes that these symptoms are actually cerebellar in origin and are due to a sort of *contracoup* action upon the diagonally opposite cerebellar hemisphere due to the increase in pressure. This view has not been generally accepted; the more favored explanation is a direct interference with the cells or fibers of the frontopontine tracts. The most recent defender of the latter view is Gerstmann.[94] He discusses the subject under the terms of "astasia and abasia" of the frontal lobes, dividing the symptoms under this heading into four categories. (1) *Frontal ataxia:* This resembles cerebellar ataxia, but was seen by Gerstmann not only in tumor cases with increased intracranial pressure, but also during the war in bullet injuries to the frontal poles. (2) *Station and gait:* There seems often to be a lost sense of station. The patient constantly searches for his center of gravity. There is a tendency toward retropulsion, the gait is hesitant and the patient appears as though he is being held back or pushed by some invisible force. (3) *Gait apraxia:* In some cases without paralysis, and supported by some one on either side, the patient seems, nevertheless, glued to the floor, unable to move except, perhaps, backwards. In bed the legs can be moved voluntarily but alternate walking motions cannot be carried out. This may be due to

an involvement of the corpus callosum. (4) *Astasia:* Occasionally a patient with a frontal lobe tumor is unable to sit or stand when helped up, and falls in a heap, yet movements and even strength of the musculature are unimpaired while lying in bed. All these four symptoms may appear alone or together, and one may be more marked than another.

Tumors occurring on the under surface of the frontal lobes involve the optic and olfactory nerves. Dr. Foster Kennedy[126] was the first to call attention to the combination of primary optic atrophy on the side of the tumor—due to direct pressure upon the optic nerve—and papilledema of the opposite nerve head, as a result of increased intracranial pressure, in certain tumors as well as abscesses of the frontal lobes. Impairment of the sense of smell on the side of the tumor may be associated with the Kennedy syndrome, especially in those meningiomas arising from the olfactory groove. A very complete study of a series of such tumors has recently been made by Cushing.[57] Müller and others have reported cases of frontal lobe tumors with unilateral exophthalmos.

It would appear, therefore, that greater help in the diagnosis of frontal lobe tumors may be obtained from symptoms referable to interference with neighboring structures than with the frontal lobes themselves. It may be helpful, in summary, to bring up to date an outline of symptoms of frontal lobe tumor by Dr. T. Grainger Stewart:[185]

1. General Symptoms.

(a) General increase in intracranial pressure usually appearing late in the course of the disease.

(b) Mental symptoms, often the earliest symptoms.

(c) Absence of focal signs pertaining to other parts of the brain.

2. Signs homolateral to the tumor.

(a) Earlier development and greater intensity of choked disc.

(b) Fine vibratory tremor in the extended limbs.

(c) Focal cranial nerve symptoms—optic, olfactory.

(d) Local external signs—exostosis, exophthalmos, dilated vessels, local bruit.

3. Signs contralateral to the tumor.

(a) Diminution or loss of abdominal or epigastric reflexes.

(b) Presence of extensor or indefinite plantar toe response and increase in deep reflexes.

(c) Hemiparesis.

Temporosphenoidal Lobe. These lobes occupy the lateral and inferior aspects of the cerebral hemispheres. Anteriorly they end in rounded poles, superiorly they are separated from the parietal lobe by the Sylvian fissure. Posteriorly they merge with the occipital lobe. As is true of the frontal lobes, the function of the greater part of the temporal lobes is not known. We do know, however, that the optic radiations pass through them in their superior and posterior aspect close under the surface of the cortex. The cortical centers for hearing, although not definitely localized, are situated in the temporal lobes. Taste and smell have their cortical seat in the uncinate and hippocampal gyri. The comprehension of spoken language is mediated through the posterior aspect of the left temporal lobe.

The symptoms of generalized increase in pressure accompanying temporal lobe tumors are no different than in other supratentorial growths. Headache is usually present, vomiting occurs in about half the cases, choked discs in 90 per cent or more. Mental symptoms are quite common and usually differ from those found in frontal lobe lesions. Kolodny[129] thinks that memory defects, while occurring later, are more common than in frontal tumors. These defects in temporal tumor cases, unlike the frontal cases in which memory for recent events is lost, involve the memory for both recent and past events. This memory defect is more frequently associated with left than with right-sided temporal tumors—possibly because memory is often of auditory and visual impressions, which suffer in a disruption of the sensory component of the speech mechanism. Disturbances of psychic function other than memory are about equal in tumors of the right and left sides. These other changes, as in the case of frontal tumors, are in temperament and personality. The patients may be euphoric or melancholic, eventually silly and childish.

Convulsive seizures occur in about half the patients with tem-

poral lobe tumors; these may be of value in localization if an aura or Jacksonian attack precedes the fit, or the reflexes immediately afterwards have lateralizing value. Of the 38 cases reported by Kolodny, 12 showed focal sensory fits. The sensory aura in temporal lobe tumors are usually due to an involvement of the uncinate region and the aura takes the form of hallucinations of taste or smell. Sometimes these uncinate phenomena occur alone without being followed by generalized convulsions. Characteristically the odor is bad, and the taste metallic and disagreeable, although sour, sweet, bitter tastes have been described. These seizures are often also accompanied by smacking, chewing, licking and swallowing movements as well as by grunting, moaning and hiccoughing. Frequently a unique intellectual condition named "dreamy state" and defined as a "voluminous state" by Hughlings Jackson[120] accompanies these seizures. These phenomena were especially studied by Foster Kennedy[125] who described them in detail. Perhaps the best brief analysis of the dreamy state is that by a patient of Kolodny: "At first everything goes black, then I feel as though I am taken miles out of myself. I do not lose consciousness, but everything around me seems to recede into the distance. My family seems miles away, their voices sound as though they are talking miles off. There is a feeling of strangeness about everything although you are in your own home. These attacks are accompanied by a taste in the throat and a smell in the nostrils like lysol." Since genuine epilepsy is seldom associated with hallucinations of taste and smell, and since these may precede other symptoms in temporal lobe tumors, they should serve as very valuable localizing signs.

The impairment of hearing, in the ordinary sense, by temporal lobe tumors is seldom clear cut and rarely helps in a diagnosis. Sensory speech disturbance in left-sided tumors, on the other hand, is of the greatest importance. This usually takes the form of an inability to recognize or interpret spoken language or other ordinary sound, and often an inability to identify sounds and noises with the objects producing them. Lesions in the region of the angular gyrus may cause inability to understand written or printed language while auditory impressions are intelligently received.

Among the most important aids in localizing lesions of the temporal lobe are the changes in the visual fields. Cushing[50] reported 33 out of 39 cases reliably examined in which the field defects were of greatest importance in the diagnosis. Lillie[133] found that "localization as to the site of the lesion was possible in 43 of 60 cases of temporal lobe tumor from definite perimetric fields alone." He concluded from his material that an ocular syndrome could be established for early temporal lobe tumors; namely, normal visual acuity, bilateral choked discs, and homonymous quadrant field defects. Later on, the defects may become hemianopic, although this, according to Cushing, is more characteristic of occipital lobe tumors. Another visual phenomenon in temporal lobe tumors is the occurrence of visual hallucinations. Horrax[110] found them present in 17 out of 72 temporal lobe tumor cases. In 12 these were of a formed character while in 5 they were of a more simple nature. Cushing[50] is of the opinion that these hallucinations are due to irritation by the tumor of the optic radiations, since the hallucinatory visions appear on the blind side of the field in the presence of a hemianopia. But Horrax has shown that hallucinations may be present in cases without field defects, or may precede the defects by a considerable period of time. The distinction between visual hallucinations occurring with temporal tumors and occipital ones is that, accompanying the latter, the visions are unformed flashes of light and color whereas with the former the images are usually complex. The formed visions although quite complicated in certain cases repeat themselves in every detail, from time to time. Thus the writer recalls the case of a lady with a left temporal meningioma who always saw, off to the right, a gentleman with a cane, dressed in the style of the middle of the nineteenth century, and leading a white dog. This picture never varied although the hallucination was repeated many times each day.

Pyramidal tract signs are quite common in temporal lobe tumors, and may appear early in the disease. They may vary from loss or reduction in the abdominal reflexes of the contralateral side to complete hemiplegia.

Disturbances of the size and shape of the pupil, and occasionally ptosis, may be present, as well as ipsilateral corneal areflexia.

These symptoms are due to the pressure of the enlarged temporal lobe upon the oculomotor trunk and the sympathetic fibers accompanying the first division of the trigeminal nerve. Knapp[128] has emphasized these sympathetic phenomena, especially a homolateral oculomotor paresis—particularly ptosis and mydriasis, which may be transitory—coupled with a contralateral hemiplegia. He also remarked the presence of pseudocerebellar changes in equilibrium in some cases of temporal lobe tumor.

Schwab,[178] basing his observations on six verified cases seen in Foerster's clinic, was able to find three symptoms common to cases with temporal lobe lesions:

1. Spontaneous past-pointing inward with the contralateral hand.
2. Falling backwards and toward the contralateral side when standing, walking, also, at times, sitting.
3. An essentially contralateral, hemilateral pallidum syndrome. The latter resembles in many ways the Parkinsonian appearance as seen in primary or post-encephalitic cases, confined more or less to the side opposite the growth.

These points have been commented upon singly quite frequently in the literature, but no one before him, according to Schwab, has seen the triad as characteristic of temporal lobe lesions. He believes that the contralateral equilibratory changes are not due to a distant effect of pressure on the opposite cerebellar hemisphere, since they are present in gunshot wounds, small abscesses and softenings of the temporal lobe where no general pressure exists. His explanation is that a lesion of the temporal lobe involves the temporopontine tract. The fibers of this tract end in the pontine nuclei of the same side, and a new fiber tract arising in these nuclei passes to the opposite cerebellar hemisphere by way of the *brachium pontis*. The Parkinsonian changes he believes caused by pressure upon, or involvement of, the pallidum by the expanding tumor.

Occipital Lobe. The occipital lobes represent the posterior poles of the cerebral hemispheres. They are bounded anteriorly by the parietal lobes above and the temporal lobes below. Their inferior surfaces rest upon the tentorium. The chief function of the occipital lobes is that of vision. The optic radiations end

around the lips of the calcarine fissures on the medial aspects of the occipital lobes. The cuneate lobes, representing the inferior lips of the calcarines receive the fibers from the superior quadrants of the visual fields, while in lingual lobes, representing the upper lips of the calcarines, receive the fibers from the lower quadrants. The external aspects of the occipital lobes contain the higher visual centers.

Tumors of the occipital lobes are accompanied by general pressure symptoms that are, in spite of opinions by older authors, more marked and perhaps earlier than in more anterior growths. The explanation given by Stopford that the greater width of the falx in this region causes it to be displaced more easily, and thus, secondarily through a pulling up of the tentorium, produces pressure on the veins of Galen with increase in cerebral fluid formation, may account for the more marked increase in intracranial pressure.

The focal symptoms of occipital lobe tumors naturally take the form of visual disturbances. Chief among these is visual field defects. These defects, however, are usually relatively gross, since the fibers of the optic radiations converge upon the relatively small calcarine area, and most tumors, by the time symptoms appear, are so large that the entire area of one lobe is involved. The characteristic disturbance is, therefore, a crossed homonymous hemianopia. As already mentioned this complete hemianopia is frequently valuable in differentiating occipital from temporal lobe lesions. In the latter area where the radiations are spread out Dr. Cushing has shown that their involvement is usually incomplete and the fields suffer a homonymous upper or lower quadrantic defect. The difference is somewhat analagous to the difference in the degrees of paralysis resulting from two lesions of the same size, one involving a motor area of the cortex with a resulting monoplegia, the other, the internal capsule, causing a complete hemiplegia. The exquisitely minute localization of different parts of the visual fields in the calcerine cortex has been proven on numerous occasions by Gordon Holmes, Brouwer, Putnam and others, and may rarely serve to localize exactly a small tumor. It proved of particular interest in gunshot wounds during the war. The reader is referred to the splendid little book

on injuries of the brain, based on his own experience in the World War, by Charles Chatelin.[36]

Visual hallucinations in occipital tumors are not uncommon and consist of flashes of light and color. These may be followed by convulsive seizures or sensory disturbances on the half of the body contralateral to the growth. The resemblance of some of these attacks to migraine often misleads the physician, especially in those cases of occipital tumor which are unaccompanied by papilledema.

Pressure upon, or involvement of, neighboring parts of the brain may lead to symptoms pointing to dysfunction of these parts. Thus the neighboring post-central convolution, if affected, may cause sensory disturbances in the contralateral half of the body. If the tumor is on the left side, the sensory speech area may be interfered with. Pressure downward upon the tentorium may lead to homolateral cerebellar symptoms.

Central Convolutions—The Pre-Central Gyrus. Because of the well-known function of the pre-Rolandic gyrus, tumors of this area are recognized early and, therefore, stand a better chance of being cured. Growths that involve the cortex are characterized by Jacksonian fits involving such parts of the opposite limbs or side of the body as correspond to the part of the convolution occupied by the tumor, as long as this part is still irritable. Moreover, the sequence of muscles involved, no matter where the seizure starts, follows the topographical arrangement of centers in the cortex. Thus it never occurs that a fit beginning, for example, in the foot jumps from the lower extremity to the face, skipping the arm. The order in such a case is always leg, body, arm and face. Seizures beginning in the masseters, temporal muscles, often the trunk, the forehead, the larynx may be bilateral, although usually more marked contralateral to the lesion, inasmuch as these muscles receive bilateral cortical innervation. Considerable patience and practice is necessary in observing Jacksonian seizures, since the sequence of events is extremely rapid and one sometimes may be uncertain where a seizure began even though it took place directly before his eyes. These fits may occur alone or be followed by generalized convulsions. When the focal seizure alone occurs

consciousness is usually retained. As the growth continues, monoplegia, later hemiplegia, may result. In those cases where the growth arises subcortically, the paralysis may be the first sign, and the fits may not appear until sometimes afterwards when the expanding tumor comes to involve the cortex itself. Owing to the early appearance of focal signs, cases of pre-central tumors are frequently seen before the development of general pressure symptoms, and, if properly treated, such symptoms may never arise.

The Post-central Convolution. The romantic chapter in the charting of the human cerebral motor cortex to which F. Krause, Horsley, Sherrington, Cushing, Foerster and others have so brilliantly contributed, cannot be entered into. The limits of even the motor areas are, nevertheless, not completely established even today. It is known, however, that at the depth of the central fissure the chief function of the cortex changes in a posterior direction from motor to senory. Cushing[45] was the first to demonstrate the sensory character of impulses arising in the post-central convolutions upon two conscious patients at operation. Both were epileptics whose seizures began with numb sensations in the fingers, hand and arm of one side. In both he identified the motor convolution by electrical stimulation, then applying the same current to the post-central gyrus was able to cause the same sensation in each patient as usually preceded his fit. More recently, Foerster[90] has shown that a galvanic current about twice the strength necessary to produce motor response to stimulation of the pre-Rolandic gyrus will call forth a similar motor response from the posterior gyrus. This he interprets to mean that sensory impulses arising in the post-central convolution can cause a stimulation of the pre-central cortical cells by way of a connecting neuron passing from the sensory to the motor cells along the subcortical "U" fibers. Foerster thinks that the presence of the additional synapse is the reason for the greater current necessary to call forth a motor response by stimulating the sensory cortex.

It is no longer, therefore, absolutely essential to invoke a pressure upon the contiguous motor centers in tumors primarily in the sensory cortex which show secondary motor phenomena. The close relationship between the posterior and anterior central con-

volutions will explain the very frequent association of numbness, tingling and similar paraesthesias with motor epileptic seizures both local and generalized. But tumors of the posterior convolution have been found which will cause sensory seizures alone, and eventually loss of cortical sensibility, without any or very slight motor paresis, in a single extremity or an entire side. Sensory disturbances of this convolution do not lead so much to loss of crude sensibility such as pain and temperature—the *protopathic* sensibility of Head—but rather to that of discriminatory sensibility: the power to judge the difference between textures and qualities, the difference between weights of different value, the discrimination between one or two points, etc. Another characteristic of cortical anaesthesia is ease of fatiguability of response to stimulation. Thus two point discrimination may be quite accurate at the beginning of an examination, but rapidly falls off until in a very few minutes the patient is simply guessing. Naturally, since this type of affection involves the usual function of the hands and more especially the fingers, it is best demonstrated there. Indeed, very little change can be brought out in the proximal parts of the extremities.

Parietal Lobe. The parietal lobes usually are considered to include the post-central convolutions, which have already been discussed, the paracentral lobules, the angular and supramarginal gyri.

Tumors involving the paracentral lobules produce asteriognosis, that is, the loss of the power to identify objects placed in the contralateral hand. It is, however, very rare to find a brain tumor case, recognizable as such, with the tumor small enough to involve the paracentral lobule alone and produce astereognosis as an isolated symptom. The usual thing is to find other sensory and even motor changes, visual field defects and, in left-sided lesions, speech defects.

The left angular and supramarginal gyri, or the right ones in left-handed people, are the supposed seats of visual speech, so that their destruction or compression by tumor should lead to word blindness—the inability to understand printed or written language, even though the individual letters or even words can be seen by the patient. This is true to a certain extent, and a tumor

here certainly gives a recognizable aphasia which is of great importance in diagnosis in a practical way, although there is never present an absolutely pure type of aphasia as it is theoretically conceived by the various writers.

Corpus Callosum. Tumors more or less strictly confined to the corpus callosum are so rare that very few have ever come under the eyes of a single observer. Consequently most of the more extensive writings dealing with them have been based upon unequally studied cases reported in the literature. Two earlier, very excellent studies are by Bristowe,[30] and by Ransom;[161] a more recent one covering 113 cases from the literature, as well as 3 of his own, was written by Balduzzi.[21] Essentially these authors are in agreement about the symptoms which, briefly, are:

(1) Minor, or absent signs of increased intracranial pressure.
(2) Usually absent cranial nerve involvement.
(3) Psychic disturbances.
(4) Apraxia of the face, tongue, and upper extremities, more especially on the left.
(5) Speech disturbances.
(6) Bilateral motor disturbances in the form of paraplegia.

The last is really not strictly a symptom of corpus callosum disease, but of pressure upon the contiguous coronal radiations. It is, notwithstanding, an important symptom, since its presence limits immediately the possible location of any single lesion to some midline position where both pyramidal tracts may be affected, and it occurs, according to Balduzzi, in from 35 to 50 per cent of corpus callosum tumors. The psychic changes are not specific, but apraxia if typical and recognized can be very valuable in diagnosis. Thus Davidoff and Ferraro describe one case of a patient who was treated as insane because he used to urinate in his dishes after eating, and tried to put his bathrobe on as if it were trousers, who proved at autopsy to have a glioma of the corpus callosum.

Corona Radiata, Internal Capsule, Basal Ganglia, Thalamus. Subcortical tumors involving these structures are often difficult to distinguish from vascular lesions. This particularly is true in the rapidly growing spongioblastomas, into the substance of

which hemorrhage may occur and give an apoplectic countenance to the picture. Common to tumors in all these situations is the absence of any signs of cortical irritation, at least until the cortex is reached by the growth.

A tumor of the corona radiata may cause monoplegia if it is small enough and located peripherally enough. The nearer the growth to the internal capsule the more likely is the whole contralateral side to be paralyzed.

Growths involving the pallidum and corpus striatum produce tremors, choreiform or athetotic movements in the contralateral extremities. They are usually accompanied by symptoms of pressure upon neighboring structures resulting in motor, sensory or hemianopic changes.

If the lesion affects chiefly the thalamus, subjective sensations of heat or cold, and paroxysmal attacks of pain may affect the contralateral extremities. Objectively anaesthesia may be accompanied by a generalized hypersensitiveness to painful or hot and cold stimuli. Motor palsy may be slight and unaccompanied by exaggeration of deep reflexes or positive Babinski sign. If the face is involved the paresis may be evident only upon emotional stimulation such as smiling or weeping, while voluntary movement, such, for example, as is made by the patient in response, during an examination, to a command to show his teeth, may be entirely unimpaired.

Corpora Quadrigemina, Pineal Body, and Crura Cerebri. All these structures are in such close proximity to each other that one seldom sees a case in which at least two or more of them are not involved together. The important oculomotor and red nuclei seldom escape, and the narrow aqueduct of Sylvius is usually closed by pressure with a resulting secondary hydrocephalus.

The symptoms of tumor in this region are, therefore, marked by early and severe changes due to increased intracranial pressure. Papilledema is very pronounced, headache severe, vomiting frequent and projectile in character. Mental stupor, dullness, drowsiness, coma appear relatively early.

Of the focal symptoms, those referable to the oculomotor nerves or nuclei are the most constant, and the most helpful in localization. The ocular palsies are usually incomplete and usually bilat-

eral. Since the abducens pair frequently escape, external strabismus, bilateral, but usually unequal in degree with defective convergence is often seen. Inequality, irregularity and fixity of the pupils are observable. Limitation of ocular movements are characteristic. Of particular help in focal diagnosis is the limitation of rotation of the eyes in upward and downward directions. This symptom is said to be due to the impingement by the tumor upon centers in the corpora quadrigemina for these up and down movements.

Out of 12 cases of pineal tumor reported by Horrax and Bailey[114] 5 showed some degree of central deafness, this being complete in 3 cases, complete on one side in another, and mild on both sides in the fifth. They believe this symptom to result from pressure by the tumor on the posterior colliculi.

Tumors arising in the pineal body or corpora quadrigemina frequently involve the crura cerebri by pressure downward. In this case the two crura are involved and the patient shows bilateral spasticity with exaggerated deep deflexes, double ankle clonus, and positive Babinski signs on both sides. Small tumors, such as small tuberculomas, which involve one crus alone may cause hemiplegia on the contralateral side and by impinging upon the oculomotor nerve, produce oculomotor paralysis on the same side. This combination of homolateral oculomotor paralysis and contralateral hemiplegia is known as Weber's syndrome. If the lesion is deeper in the substance of the mid-brain the red nucleus becomes involved, and the contralateral side of the body may show a "wax figure" rigidity and tremor resembling Parkinson's disease. The oculomotor nerve passing through the red nucleus is also involved so that the combination of rigidity and tremor on the contralateral side and homolateral oculomotor palsy is also a conceivable but extremely rare occurrence known by the name of Benedikt's syndrome.

Cerebellar symptoms are quite frequent and often sufficiently marked to lead to a false diagnosis of suboccipital tumor. Occasionally hemihypaesthesia, polyuria, abducens palsy, homonymous hemianopia may occur depending up on the direction in which the tumor extends.

Concerning the endocrine aspect of pineal tumors, something

has already been said in the chapter on pathology. It bears repeating, however, that although all cases of pubertas præcox are not due to pineal tumor and all pineal tumors in preadolescence are not accompanied by premature puberty, as von Frankl-Hochwart[200] put it, "if one finds in a very young individual (boy) along with the general symptoms of tumor, as well as the local signs of a lesion of the corpora quadrigemina, abnormal body growth, unusual growth of hair, adiposity, somnolence, premature genital and sexual development, and finally intellectual maturity, one must think of pineal tumor."

The Third Ventricle. The third ventricle is bounded laterally by the thalami above, and the tuber cinerium and infundibulum below. Inferiorly the optic chiasm and hypophysis are located. Superiorly the velum interpositum which transmits the veins of Galen is situated. Its outlets are the foramina of Monro anteriorly, and the aqueduct of Sylvius posteriorly. It contains cerebrospinal fluid and part of the choroid plexus in its slit-like cavity. Weisenburg[203] who analyzed 30 cases, including 3 of his own, of tumors growing from the walls or choroid plexus into the cavity of the third ventricles divided the symptoms into three groups depending upon the size and location of the tumor. (1) Those cases in which a tumor of moderate size is situated in the floor of the third ventricle, and in which there is no extension into the foramina of Monro or aqueduct of Sylvius. (2) Small tumors so situated as to obstruct the foramina of Monro, and whose position could be changed by deviation of the head. (3) Tumors, large or small, which either extend into the aqueduct of Sylvius, affecting the surrounding structures by direct extension or pressure, or those in which the posterior portions of the cerebral peduncle and pons are compressed either by direct pressure or dilatation of the aqueduct of Sylvius.

The 30 cases which he reported all showed evidence of increased intracranial pressure, many had cerebellar symptoms arising from pressure upon the superior cerebellar peduncle, or from indirect pressure upon the cerebellum due to the hydrocephalus. Sixteen were stupid, dull or drowsy. The third variety which was the largest, owing to impingement upon mid-brain structures, showed signs and symptoms suggesting lesions of the mesencephalon.

Weisenburg's analysis included many cases which were clinically very inadequately studied, and only cases which were above the floor of the ventricle were considered. As a consequence he did not analyze such symptoms as obesity, polyphagia, polyuria, polydipsia, etc., which are now considered symptoms of infundibular disturbances.

In the recent literature on third ventricle tumors these infundibular signs have been taken more into account, although the controversy is not yet closed as to whether many of the vegetative functions are controlled entirely by the centers in the infundibulum or by hormonic activity of the hypophysis. The countless number of cases with adiposo-genital dystrophy associated with primary pituitary disturbances lend support to the opinion that these symptoms are hypophyseal in origin. P. E. Smith in some beautiful experiments on young rats on the other hand, has been able to show that pathological obesity results from a disturbance of the centers of the infundibulum and tuber cinerium without injury to the pituitary body. Camus and Roussy[33] and Bailey and Bremer[14] have shown that puncture of the tuber cinerium in dogs results in polyuria. Hosts of writers may be cited to support either contention. Still others, as Adie,[1] for example, who are impressed by the anatomical intimacy of these structures believe that symptoms may arise from an interruption of the interactivity of the pituitary and *'tween brain.* We are aware that the pituitary body is joined closely to the nervous system, the anterior part by sympathetic fibers from the carotid artery; the posterior lobe by a bundle of fibers—the tractus supraopticus—arising in the nucleus supraopticus (hypophyseus) and reaching it by way of the infundibulum. It is not unlikely, therefore, that a lesion in the nervous centers results in an interference with the function of the hypophysis and *vice versa.*

Case reports in the literature seem to bear out such an interrelation. Thus we have tumors of the third ventricle pressing upon the infundibulum, but not affecting the pituitary gland, which cause, notwithstanding, adiposity, polyuria, somnolence; a well illustrated example of this sort appears in the paper by Davidoff and Ferraro. Many cases exist, on the other hand, with primary tumors of the hypophysis which do not disturb the infundibulum

but show the same symptoms. This makes the diagnosis sometimes very difficult, but characteristically the infundibular tumors are associated with increased intracranial pressure and consequent papilledema, while pituitary tumors usually produce primary optic atrophy. Differences are also present in the roentgenograms which will be considered later.

Jaumentié and Chausseblanche[124] describe an initial period in the symptoms of third ventricle tumors consisting of asthenia, emaciation and headache, later, polyuria and trophic disturbances, finally, visual defects, spasticity, hypersomnia, etc. They also consider a periodicity in the severity of the symptoms as characteristic of tumor in this region. These symptoms may not be present in all cases, however; some may show the dystrophy chiefly, others the hypersomnia, while still others may have the symptoms of pressure upon neighboring structures as an outstanding feature.

Fulton and Bailey[93] on the basis of 5 cases, recently made a very thorough study of tumors located in the third ventricle and conclude that: "There is no syndrome of the third ventricle, *per se,* but tumors immediately affecting this cavity may cause characteristic symptoms by pressure upon its walls and their contained nuclei and tracts. Among the well recognized syndromes due to lesions of these structures we may mention: (1) the infundibular syndrome (polyuria, adiposity); (2) the syndrome of the central gray matter around the posterior end of the third ventricle and aqueduct of Sylvius (hypersomnia); (3) the thalamic syndrome (central pain, painful hypaesthesia); (4) the extrapyramidal syndrome (bradykinesia, rigidity); (5) the decerebrate syndrome, hypertonicity. Magnus-de Kleijn reflexes); (6) the syndrome of Parinaud (paralysis of conjugate vertical movements of the eyeballs); (7) the syndrome of the body of Luys (hemichorea); (8) the hypopituitary syndrome (infantilism, hypotrichosis, lowered metabolism); (9) the uncinate syndrome (olfactory and gustatory symptoms.)"

Suprasellar Region. Congenital cystic tumors of the suprasellar region, especially the so-called adamantinomas, are so situated that they may produce pressure upon the hypothalamic region as well as the pituitary body. They usually, although not

invariably, begin to manifest their symptoms early in life. The symptoms are of two kinds, those related to pressure upon the chiasm which results in primary optic atrophy and bitemporal hemianopia; and those referable to the pressure effects upon the hypothalamus and hypophysis. The latter are usually in the form of sexual and skeletal infantilism, adiposity, high sugar tolerance, low basal metabolic rate, and sometimes diabetes insipidus (Cushing[55]). Quite occasionally the growth rises sufficiently high to invaginate the floor of the third ventricle enough to close off the foramina of Monro. When this happens symptoms of increased intracranial pressure occur, including a papilledema superimposed, perhaps, upon a former primary optic atrophy.

Since these cystic growths usually rest above the sella turcica, the latter frequently escapes enlargement or distortion as evidenced by roentgenography. In fully 80 per cent of the cases, however, according to Cushing,[55] a shadow cast by the calcium deposit within the cyst wall is demonstrable, and is of considerable value in the diagnosis.

Middle-aged people with primary optic atrophy, bitemporal hemianopia, and a normal-sized sella turcica are much more likely to be suffering from a meningioma arising from the edges of the sella than from a congenital tumor. Holmes and Sargent[104] have reported 10 such cases, and Cushing and Eisenhardt[67] 11. It is of interest that the majority of these patients show no metabolic or vegetative dysfunctions that are so common in the group of "stalk" tumors.

Pituitary Gland. Tumors arising from the pituitary gland as such are almost always adenomatous growths originating in the glandular substance of the anterior lobe. The symptoms are again double in character. The first variety of symptoms which is common to all types of adenomas is that of local pressure upon the optic chiasm resulting in primary optic atrophy and bitemporal visual field defects. Occasionally one of these adenomas extends beyond the bounds of the enlarged sella turcica and invades the brain. Here it may amass sufficient bulk to bring about symptoms of increased intracranial pressure. Headache is a common symptom, however, even when no intracranial extension has taken place. This is believed to be due to tension applied to

the dural diaphragm covering the sella turcica as well as the dural capsule of the gland as a result of the expanding intrasellar adenoma.

The second variety of symptoms is dependent upon the disturbance of the normal function of the pituitary gland. The striking picture presented by patients with acromegaly is too well known to require any description here. A few years ago the outstanding contributions to the subject of acromegaly, since its discovery by Marie,[143] were collected by Davidoff[71] in an historical note. He also analyzed the symptomatology in 100 consecutive cases from Cushing's clinic.[72] That acromegaly and its counterpart in patients suffering from the same disease in pre-adolescence, namely gigantism, are expressions of hyperpituitarism, can no longer be doubted. Not only has Evans[87] succeeded in producing experimental gigantism in rats by injections of anterior hypophyseal extracts, but Putnam[158] and his co-workers have actually produced acromegaly in a dog by the use of a similar extract.

A clinical picture, the direct antithesis to acromegaly or gigantism—the typical adiposo-genital dystrophic individual—may nevertheless, be almost as classical a signpost pointing to a tumor of the pituitary gland as the former type of patient. The difference is in the type of tumor. Dott and Bailey[77] have called attention to an intermediary clinical appearance; patients that are above average height, with rather large, but well formed extremities, inclined to be fat and flabby, with pasty complexion and sparse hair. Bailey and Cushing[17] have shown that the adenomas in these cases are also intermediary between the type seen in acromegaly and those in pure hypopituitary cases. Dr. Cushing has frequently made the analogy between these various clinical pictures all associated with pituitary adenomas, and the differences in the degree of thyroid activity all associated with tumors of the thyroid gland.

Aside from the striking difference in physical appearance between the hyperpituitary and hypopituitary patients suffering from hypophyseal adenoma, there also exists marked variations in their metabolic processes which have been stressed by recent authors. Thus the basal metabolic rate in acromegalics has been shown to be usually increased by Boothby and Sandiford,[28] Cush-

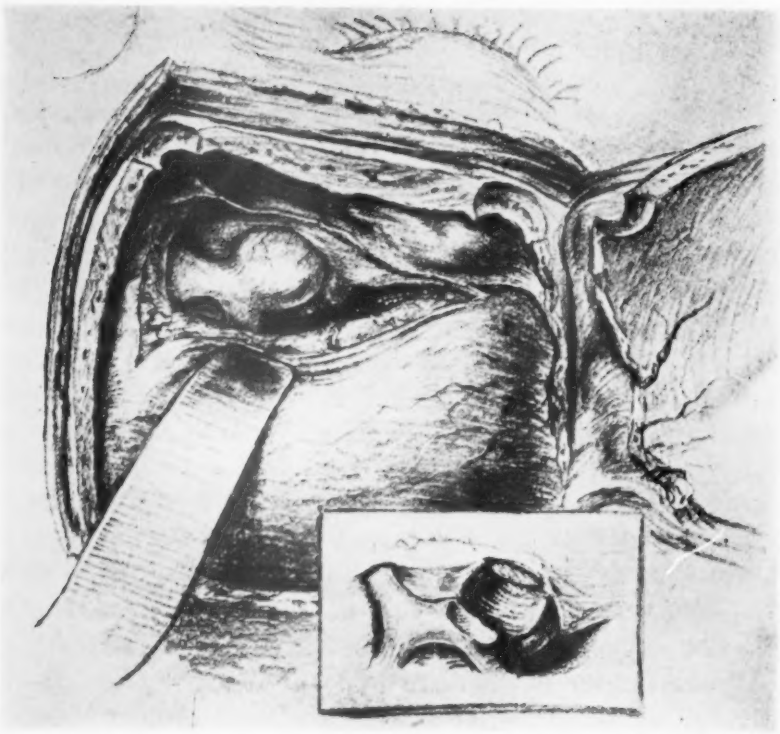


Fig. 45. Glioma of the optic nerve. Operative sketch showing the exposure of the tumefied portion of the right optic nerve. Insert shows the appearance after the resection. (Martin and Cushing.[144] Fig. 8.)

Fig. 46. Glioma of chiasm. X-ray of sella showing apparent extension of sellar fossa under anterior clinoids due (?) to dilated optic foramina. (Martin and Cushing.[144] Fig. 37.)

ing and Davidoff[65] and others. The basal rate in hypopituitary cases, on the other hand, is usually depressed. The last named authors have been able to show, moreover, that following operative removal of part of the hyperactive gland of acromegaly, the basal rate of metabolism takes a decided drop. Davidoff and Cushing[74] have also published some interesting data on the improvement in the lowered sugar tolerance of acromegalics after operation. Indeed Ellis[141] has reported a case of severe diabetes in an acromegalic which cleared up spontaneously after operative removal of the tumor. As might be expected, hypopituitary cases have a lowered basal rate of metabolism and a normal or increased tolerance for carbohydrates which are usually not affected by operation, since this does not serve to restore the pituitary functions, but simply to remove the enlarged, inactive gland.

Optic Chiasm and Nerves. While the optic nerves and chiasm may often suffer from pressure of tumors originating elsewhere, they may also be the seat of primary tumors, especially gliomas (Fig. 45). Reports of such cases usually appear in ophthalmological literature. But these are practically always cases in which the tumor arises in the ocular portion of the nerve and extends backwards. In 1923, Martin and Cushing[144] reported 7 cases originating in the chiasm or the post-ocular portion of the optic nerves. These cases are sometimes difficult to diagnose at all, and those in which the general site of the growth is suspected are usually confused with cases of congenital cystic tumors of the suprasellar region. Four of Martin and Cushing's cases were in children under ten years of age. In practically all, loss of vision was rapid and progressive, blindness in one eye was common on admission, one patient was totally blind. The visual fields in the three adults showed temporal defects in the good eye but none showed the clean cut vertical bisection of the field so characteristic of pituitary tumor. Roentgenograms which, unanalyzed appeared normal showed on retrospect an anterior extension of the sellar fossa "which passes like the neck of a gourd under the anterior clinoid processes." (Fig. 46.) Evidences of secondary hypophyseal symptoms were inconspicuous.

Base of the Cranium. The tumors causing pressure upon the cerebral structures on the basal aspect of the brain are usually

extracerebral in origin, frequently extracranial. They are usually sarcomas of the bone, carcinomas arising in the nose, the nasal sinuses or pharynx, occasionally cholesteatomas, sometimes meningiomas of the flat variety involving, as a rule, the basal structures in the middle cranial fossa, the optic or olfactory tracts; fibroblastomas arising especially from the sheath of the trigeminal nerve.

Symptoms of tumors of the base seldom point to the presence of increased intracranial pressure, but are characteristically those of widespread interference with the function of cranial nerves. "Thus," according to Bramwell, "tumors of the anterior fossa may cause unilateral anosmia or blindness; tumors of the middle fossa, if situated far forward in the region of the sphenoidal fissure, may cause paralysis of the third, fourth and sixth nerves and anaethesia of the face, a combination which constitutes a distinctive symptom complex."

Among the more comprehensive papers on tumors of the base are those by Seeligmann[179] (two cases) and by Hartmann.[103] The latter studied 37 cases of his own and from other reports. These he classified pathologically as follows: Fibromas and fibrosarcomas (12); pure sarcomas (7); carcinomas (8); endotheliomas (2). These were all confined to one side or the other of the cranial base. There were in addition 3 fibromas, 3 carcinomas, and 2 endotheliomas located bilaterally. Some of his cases were obviously acoustic perineurial fibroblastomas which we shall discuss later on.

The tumors more posteriorly located in the middle and extending into the posterior fossa, may cause contralateral hemiplegia by pressure upon the crus; symptoms referable to the fifth, sixth, seventh and lower cranial nerves. Thus one may see pain or anaesthesia of the face, paralysis of mastication, dysphonia, dysphagia, hemiparalysis of the tongue.

The tumors growing in relation to the bones of the base of the skull may often be demonstrable by the X-ray. Basilar tuberculous or syphilitic meningitis must be ruled out by the history and other physical findings.

Cerebellum. The cerebellum is a favorite seat for tumors, a fact which is especially true of children. Thus statistics from Cushing's clinic in Boston up to October 1, 1926 showed a total

of 1,108 verified tumors of the brain of which 173 were located within the substance of the cerebellum. Eighty-five of these cerebellar neoplasms occurred in children, who made up only 154 of the total 1,108 patients. In other words, about 55 per cent of all brain tumor cases in children under 15 coming to Dr. Cushing's clinic, were cerebellar tumors.

Anatomically the cerebellum occupies the greater portion of the posterior cranial fossa, where it is isolated from the cerebral hemispheres by the tentorium. Anteriorly and posteriorly it is joined with the rest of the brain by thin membranes known respectively as the anterior and posterior velum. These together with the cerebellum itself form the roof of the fourth ventricle. The posterior velum contains the foramina of Lushka and Magendie which are the outlets for the cerebral fluid into the cerebral and spinal subarachnoid spaces. Laterally the cerebellum is joined to the brain stem by three pairs of arms or peduncles. The superior peduncles consist largely of efferent fibers passing from the dentate nuclei to the contralateral red nuclei. Secondary neurons arising in the red nuclei recross again to the other side to terminate about the anterior horn cells at various levels of the spinal cord. The cerebellar hemispheres are, therefore, brought indirectly into relation with the homolateral anterior horn cells of the cord. The middle peduncles connect the cells of the cerebellar cortex of one side with the pontine nuclei of the opposite side. These nuclei stand in relation to the fibers of the fronto- and temporo-pontine tracts of the same side. Thus the frontal and temporal lobes are joined to the contralateral cerebellar hemispheres, the posterior peduncles or restiform bodies carry efferent fibers of the direct spino-cerebellar tract as well as efferents from the contralateral inferior olivary body to the dentate nuclei.

The morphological differentiation of the parts of the cerebellum is still being disputed by a great array of authorities not the least of whom are E. L. Smith, Bolk, Ingvar, Marburg, Edinger and others. One thing at least is settled, namely, that a logical division of the cerebellum is no longer possible purely on an anthropotomic basis. The new schemata are based on phylogeny and ontogeny and most of them have this in common that the strict division of vermis and lateral lobes has been abandoned and a more or less

horizontal separation into parts is attempted. The latter views, are, however, again being disputed by Hyashi and Jakob and the whole question again thrown open.

Owing to the uniformity of the histologic structure of the cerebellar cortex throughout the organ, the boundaries between logical divisions according to function has also been difficult. Professor Jakob,[121] however, believes that even histologically, taking the relationship to the central nuclei, etc., into account, such divisions exist, and concludes from his studies that "Not only the morphologic but also the histologic structural relations point to the fact that we have in the cerebellum, in addition to uniformity of the primary function in the different parts, functional variations as well, both in the primary mechanism and in connection with certain motor complexes, whereby a limb-topographical localization appears to exist."

The function as well as the morphology of the cerebellum is today still a moot question in spite of voluminous efforts at its elucidation. The usual methods of experimental study, stimulation and extirpation, have not yielded any very definite or positive information. Coming after a number of uncertain attempts by others at stimulating the cerebellum electrically, Horsely and Clarke[115 116] devoted eight years to this work, making use of very ingenious machinery. But the results of the entire effort were summed up in a posthumous note of Clarke[37] published in 1926 to the effect that (1) "The cortex of the cerebellum is inexcitable in the sense of originating impulses that act directly on particular groups of muscles. (2) The only part of the cerebellum sensitive to electrical stimulation is the region of the central nuclei and the floor of the fourth ventricle, but the reactions obtained from here are due to the spread of the electrical current to neighboring bulbar and mesencephalic structures, or to its conduction by paths of least resistance to parts of the nervous system with which the cerebellum is closely connected. The most frequent responses to stimulation of the cerebellum in all the animals we employed were movements of the head and eyes."

The old extirpation experiments by Luciani, Risien Russell and others which had as their outstanding effect asthenia, atonia and weakness, as well as ataxia and incoordination have not altogether

stood the test of time. Perhaps the most satisfactory studies by extirpation are those recently made by Rademaker.[160] He found, six months after total extirpation of the cerebellum in cats: (1) An increase rather than decrease in tonus; (2) Static labyrinthin and righting reflexes well preserved; (3) Active equilibratory defenses; (4) No demonstrable sensory disturbances. The animals are in constant movement when standing—"dancing" on their paws. The head also shakes continuously back and forth and to the side, and undergoes a "hammering" motion especially when they attempt to eat. The movements continue whether the eyes are open or covered; whether the head or pelvis is fixed; whether standing on the hind or front legs alone. The movements can be made to stop, however, when (a) one grasps a large fold of skin of the back and pinches it; (b) holds the animal in the air; (c) places the animals on their backs.

In addition to these constant motions they are markedly ataxic; they run with a broad base, cross their legs while running, raise their paws too high and place them down too severely, extend them or flex them too much. The hindquarters go up and down and to the sides in an exaggerated fashion while walking. The head and tail move too much. They run "up high" on extended legs or in springs. Sometimes the normal alterations of the legs are disturbed. They seldom actually fall while running on a level surface, can turn quite rapidly and can run long distances with packs on their backs. But they go upstairs very badly and are inclined to fall backwards. They seldom jump; and when they do they make too wide a leap.

In the case of tumors of the cerebellum, symptoms of cerebellar dysfunction are complicated, sometimes even overshadowed by those of increased intracranial pressure, which occurs early and reaches a high degree in these cases. The headache is usually severe, is frequently localized suboccipitally, and is often accompanied by suboccipital tenderness and pain down the muscles of the neck which sometimes show a considerable degree of rigidity, especially on the side of the tumor. There is often seen what is called a "cerebellar attitude" of the head consisting of an inclination of the occiput toward the side of the lesion with a tilt of the chin in the opposite direction. Batten[23] was the first to call atten-

tion to this sign clinically, although he warned against giving it too much importance as a diagnostic aid. This attitude is very likely assumed to protect the painful suboccipital muscles on the side of the lesion. Frontal headaches are also very common in cerebellar cases and Oppenheim has frequently seen unilateral or bilateral anosmia as a result of increase in pressure.

In young children the head enlarges as a result of the hydrocephalus, and owing to the separation of the sutures a "cracked-pot" sound may be elicited on percussing the cranium (Macewen sign). This absence of synostosis between the sutures of the cranial bones in children may serve to a limited extent as a safety valve, so that papilledema may appear a little later than in similar cases in adults. Sooner or later, however, papilledema appears and is often extremely marked.

Vomiting and vertigo are almost invariably present, indeed it is not inconceivable that the frequent severe vomiting may account for some of the asthenia seen in these patients. Certainly it is so outstanding a symptom in some cases of cerebellar tumor that unwary physicians have on many occasions lost valuable time while investigating the state of the patient's gastrointestinal tract.

A series of cases of gunshot wounds to the cerebellum was studied by Gordon Holmes[107] during the war—and has supplied him with an exceptional opportunity to study the effects of ablation of parts of the cerebellum in human beings, uncomplicated by increased intracranial pressure, comparable to the ablation experiments in animals. To be sure, most of the studies were within two months following the injury, but they served as an excellent check on our notions of cerebellar symptoms resulting from tumor and other diseases lasting a longer time.

Some of Holmes' findings in injuries to the cerebellum are not constantly, although frequently, seen in tumors. Thus atonia and asthenia of the homolateral side, when present, are easily recognizable as flabbiness of the muscles, hyperextensibility of the joints, slowness and apparent weakness of the muscular movements. But these symptoms are actually less common than we used to believe in tumors of the cerebellum.

Ataxia. Ataxia of the limbs on the side of the lesion is much more constantly found. This disturbance is more easily demon-

strable in the upper extremity on the side of the lesion than in the lower one. In attempting to place the index finger on the nose or some other object, the arm, hand and finger sway in all directions on their course, then the finger vacillates from side to side rarely stopping accurately on the point indicated. As one of Holmes' patients expressed it—the hand "is drunk; it will not go straight."

Asynergia. By this is meant the "inability to accomplish simultaneously the various movements that constitute an act," so that the act becomes split up into separate movements, and carried out "by numbers" as in a gymnastic drill.

Dysmetria. The aim of the limbs on the affected side is bad in that the patient over-reaches or stops short of his object. Thus in attempting to put his finger to his nose he may poke his eye instead.

Tremor. The voluntary movements are often accompanied by an irregular coarse tremor which may not be evident until the hand or finger comes to within a few inches of its object. It is much more irregular than the ordinary intention tremor seen in multiple sclerosis.

Rebound Phenomenon. When the patient, supporting his elbow on a bed or table is grasped by the wrists and asked to resist the forceful effort to extend his forearms, and is then suddenly let go, the normal arm stops immediately or rebounds by the contraction of the triceps, while the affected limb shoots in the direction of the face or shoulder. The same phenomenon may be demonstrated with other muscles on the affected side.

Adiadochokenesis. This state is a disturbance of the alternating movements in an extremity affected by cerebellar disease. Thus if the patient is asked to pronate and supinate both hands at the wrists simultaneously, it will immediately be seen that the hand on the side of the lesion is awkward, slow and frequently repeats instead of alternates the movements.

Drifting of the Extended Limbs. If the patient is asked to extend his arms before him with his eyes closed, it will soon be noted that the arm homolateral to the lesion will slowly or abruptly drift away from the symmetrical position, usually lateralward.

Station and Gait. Patients with considerable involvement of one cerebellar lobe are unsteady on their feet, stand and walk with feet well apart (wide base) and tend to fall toward the side of the lesion. There is no increase in the unsteadiness with the eyes closed, over what it is with eyes open. Occasionally the first symptom may be remarked by a relative, the wife or husband, for example, as a tendency on the part of the patient to bump into the other person while walking, but always toward one side.

Nystagmus. This is a very common symptoms in lateral lesions of the cerebellum. The nystagmoid jerks are brought out as a rule only when the patient fixes an object to one side or the other. The movements are usually directly lateral, and may be slower toward the side of the lesion than toward the other side.

Cerebellar Fits. Hughlings Jackson described fits of a tonic character occurring in patients with cerebellar tumors. This is often associated with loss of consciousness and opisthotonus, and tends to be greater on the side of the lesion. There may be some rotation of the head, trunk and limbs toward the contralateral side.

Cranial Nerve Involvements. The involvement of the cranial nerves is conspicuous by its usual absence in intracerebellar growths. A common exception is a palsy of one or both abducens nerves which, as Cushing[46] has long pointed out, is of no localizing value since the increase in intracranial pressure may cause a strangulation of this nerve as it is crossed by branches of the basilar artery in its long course to the external rectus muscle. Occasionally the facial, rarely also the trigeminal, nerves show some paresis.

Speech is sometimes monotonous and indistinct and may perhaps be due to medullary involvement of the nerves concerned in articulation and phonation.

Reflexes. The deep reflexes, except in states of advanced asthenia, are either normal or exaggerated on the affected side. The ataxia present in the limb is likely to be brought out during tests for deep reflexes in the form of additional swings following the one in response to the stimulus.

Tumors of the Vermis. Tumors entirely confined to the ver-

mis are rare but one type of tumor of which Bailey and Cushing[15] reported 29 examples, occurring characteristically in children—the medulloblastomas of these writers—tends to arise in, and be more or less limited to the vermis. These children, in addition to bilateral ataxia, dysmetria, tremor, asynergia, etc., quite regularly show no, or very little nystagmus. This, in addition to the bilateral cerebellar symptoms, which, incidentally, may be slight in degree, help to localize the lesion to the vermis.

It would seem from this array of symptoms that the diagnosis of cerebellar tumors would present very few difficulties. Yet tumors in other parts, especially the frontal and suprasellar region may give secondary cerebellar symptoms, which, if full blown at the time of admission to the hospital, may frequently lead to wrong diagnosis and cerebellar exploration. In 1924 Bailey[9] reported three cases of suprasellar tumor two of which had actually been submitted to suboccipital exploration. He called attention to the extreme importance of the chronological development of symptoms, since cerebellar symptoms, when secondary, usually develop last among the localizing signs instead of first as in the case of primary cerebellar tumors. Four years later Grant[101] also writing from Cushing's clinic, reported five supratentorial tumors mistaken for cerebellar. His plea, in retrospect, was for paying greater attention to the symmetry and degree of dilatation of the ventricles as tested by air injections.

Extracerebellar Tumors. Acoustic Fibrolastomas (neuromas). Unlike the tumors of the cerebellum proper, the extracerebellar growths of which the fibroblastomas of the acoustic nerve represent the commonest type, show a great deal of cranial nerve involvement. The chronological development of symptoms is, as Cushing points out, extremely important. The initial symptom may be tinnitus or deafness in one ear which may remain the only symptom for many months or even years. Then gradually suboccipital pain or discomfort may arise followed by incoordination, ataxia, etc., due to an impingement upon the cerebellum. By this time hypaesthesia of the face with loss of the corneal reflex on the affected side and some homolateral palsy of the facial muscles due to an involvement of the neighboring nerves may have developed. At this stage the tumor has probably reached sufficient

size to interfere with the cerebrospinal circulation with resulting vomiting and choked discs. Finally the posterior group of cranial nerves becomes involved, there is dysarthria, dysphagia, and eventually, respiratory disturbances.

Tumors of the Pons. These cases make up less than one per cent of brain tumors. They are seldom complicated by symptoms of increased intracranial pressure. The classical pontine syndrome is paralysis of the areas supplied by the trigeminal, abducens, facial, sometimes acoustic, nerves on the side of the tumor and a paralysis of the contralateral limbs and trunk. Horrax[112] who presented a differential consideration between 15 pontine tumors and an equal number arising in the pineal body, regards the mode of onset in tumors of these two locations as an important point. Whereas, in the case of pineal lesions the onset is almost invariably with general pressure symptoms, tumors of the pons usually begin with cranial nerve disturbances. Growths in both locations may be accompanied by secondary cerebellar symptoms. Sometimes the pontine lesion extends across the midline to involve the other side. Under these circumstances very generalized palsies and cranial nerve disturbances ensue.

Tumors of the Medulla. It is obvious that tumors in this region must be very small in order to be compatible with life. Occasionally small tuberculomas are found here. Rarely also, gliomas. Thus Tooth found a single one among 500 brain tumors. More recently Perkins[156] reported a glioma extending from the pyramidal decussations to the mid-olive region on the left side of the medulla. The symptoms are referable to the posterior cranial nerves and to the motor and sensory pathways. If it is confined to one side one may see the extremely rare condition of paralysis of the tongue on one side, and the body on the opposite side. In Perkin's case there was ipsilateral hemiasynergia and hemiataxia due to involvement of the dorsal and ventral spinocerebellar tracts. The larynx and palate on the side of the lesion were paralyzed owing to an infiltration of the nucleus ambigus by the tumor. The sternocleidomastoid and trapezius as well as the tongue were paralyzed on the side of the lesion. The left side of the face was anaesthetic because of the intrusion of the descending trigeminal tract. There was also present contralateral paralysis

and anaesthesia to pain and temperature on the opposite side of the body, some irregularity of the pulse and respiratory rate, as well as vertigo and nystagmus, the latter probably due to an involvement of the descending vestibular nucleus and tract.

Multiple Brain Tumors. Primary tumors of the brain are rarely multiple. Those that do occur are often a combination of a glioma and a meningioma in the same case. Frequently the meningioma is small and causes no symptoms, its presence being disclosed at autopsy following death from the gliomatous growth. Multiple meningiomas are sometimes seen in cases of generalized von Recklinghausen's disease. Occasionally bilateral acoustic fibroblastomas appear alone or also associated with van Recklinghausen's disease. Metastatic tumors, of course, are frequently multiple.

Symptoms from multiple tumors vary with their size and location. If located close together symptoms of a single large growth may be observed. If far apart, one may give focal signs while the others may simply add to the signs of general pressure. Occasionally, multiple tumors, all located in regions of known function, may cause focal symptoms referable to two or more areas. The diagnosis of multiple tumor is difficult, and if made, the exact situation of the several tumors is seldom correctly diagnosed.

THE THEORY OF REGRESSION IN CLINICAL PSYCHIATRY*

BY J. H. W. VAN OPHUIJSEN, M. D.,
THE HAGUE

It is both an honor and a pleasure to me to address you today and to call your attention to the influence which one of Freud's earliest conceptions has had on certain psychiatric problems: the conception of the regression of the libido to positions, which it had at least partly abandoned and to which it is proved to flow back in case some insurmountable obstacle places itself in the way.

Built up by Freud's penetrating genius and the incessant efforts of those who responded to his stimulating guidance, psychoanalysis has shown such a rapid development that it has presented no small difficulty to those whose acquaintance with psychoanalysis dates back many years to keep up with it, if, "keeping up with it" is not meant in the sense of gathering knowledge of newly found or newly formulated facts, but as indicating the inner growth and the freeing from resistances, which render it possible to make full use of the recently acquired knowledge. On the other hand those whose acquaintance with psychoanalysis goes back only a few years will no doubt easily fall victims to the seductive belief of considering their knowledge of psychoanalysis complete, if they have studied the latest publications, which contain all that there is to be known, it is true, and have their solid foundation in observations and theories laid down in the older publications. To them also, it may be said that a real knowledge of psychoanalysis is acquired only, when the necessary intellectual effort and the psychological evolution, which I have hinted at, go hand in hand.

I need hardly say that being analyzed oneself is the only way to realize this evolution, as it means the repeating in oneself of all the stages and phases psychoanalysis has passed through since Freud's first publications. Freud himself has stated—again in his latest book[1]—how very necessary the overcoming of resistances is for the gaining of new insight.

Therefore it seems to me very necessary to look back every now and then in order not to lose contact with those conceptions, which

1. Sigmund Freud. Das Unbehagen in der Kultur, 1930 Internat. Psychoanalyt. Verlag, Wien.

* Paper read at the 18th annual meeting of the American Psychoanalytic Association, Washington, D. C., May 8, 1930.

in the past, more or less dominated the way in which familiar phenomena were looked at; and I feel, that if I owe you an apology for putting before you facts which may be known to you, it could only be for disappointing you, in so far as you may have expected to hear some new thing.

Now, when carefully studying Freud's publications, one makes the discovery that the germs of all which we now consider as new, are to be found even in his earliest articles and even in those cases in which Freud himself expressly tells us that he has changed his opinion, the possibility of the new conception is to be found in earlier communications. In fact, nothing can give such a mighty impression of the working of a genius, such an admiration for the achievements of a mastermind as a careful study of Freud's works.

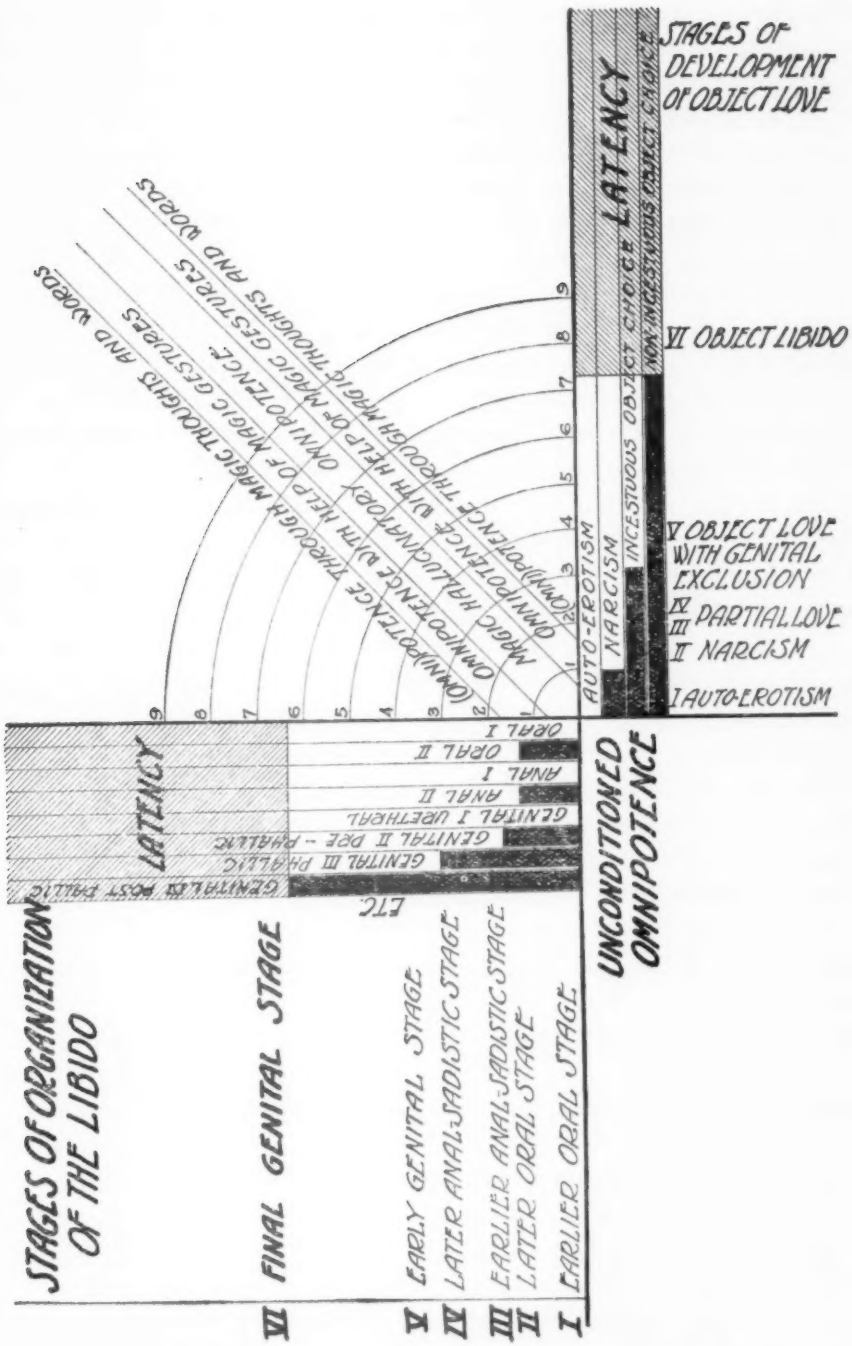
The theory of regression itself is a good example of what I have said about the germs of later conceptions being contained in formulations of an earlier period. I do not remember at this moment when Freud first introduced the conception of regression, or regressive revival, but we may safely say, without fear of contradiction, that it was implied in his theory of *hysteria* as early as the moment when he passed from the very first form of the traumatic aetiology to the next one and accepted the view that the hysterical symptoms are overdetermined.[2]

One of Freud's most important articles, with regard to its influence on clinical psychiatry, is without doubt the one which deals with *The Disposition to the Compulsion Neurosis.*[3] It has even led us to make a change in our diagnostic scheme. For, whereas other schools of psychiatry have been and still are, in the habit of putting the phobia and the compulsion neurosis together under the heading of psychasthenia, psychoanalysis has separated the two, incorporating the phobia with hysteria, sometimes speaking of *anxiety hysteria* (Angsthysterie) and leaving the compulsion neurosis in a class by itself. It has done so because psychoanalytical investigation has shown that the compulsion symptom is derived from a more primitive phase of libidinal organization.

2. Sigmund Freud. Selected Papers on Hysteria and Other Psychoneuroses, 3rd edition, trans. by A. A. Brill. Sammlung kleiner Schriften—Neurosenlehre, Vol I and II.

3. Sigmund Freud. Die Disposition zu zwangsneurose, Internat. Zeitschr. f. Psychoanalyse.

Both the conversion and the phobic symptoms of hysteria can be traced back to the phallic stage of the development of the libido, whereas the compulsion symptom has its root in the later anal period, with its complimentary sadistic characteristics. At this point it would be wise to pause and ask ourselves exactly what Freud meant when he spoke of a regression to anal eroticism. He has taught us to distinguish between the sexual object and the sexual aim and when we find him speaking of one of these two only, we must make sure, that we do understand his meaning correctly. In order to facilitate this, I have prepared a diagram which I generally use when delivering courses on these subjects, e. g., in the Dutch Institute for Psychoanalysis.


STAGES OF ORGANIZATION OF THE LIBIDO
VII FINAL GENITAL STAGE
VI EARLY GENITAL STAGE
V LATER ANAL SADISTIC STAGE
IV EARLIER ANAL SADISTIC STAGE
III LATER ORAL STAGE
II EARLIER ORAL STAGE
I
UNCONDITIONED OMNIPOTENCE
ETC.
LATENCY
GENITAL III PHALLIC
GENITAL II PRE - PHALLIC
GENITAL I URETHRAL
ANAL II
ANAL I
ORAL II
ORAL I
(OMNIPOTENCE THROUGH MAGIC THOUGHTS AND WORDS
OMNIPOTENCE WITH HELP OF MAGIC GESTURES
MAGIC HALLUCINATORY OMNIPOTENCE WITH HELP OF MAGIC GESTURES
OMNIPOTENCE THROUGH MAGIC THOUGHTS AND WORDS
AUTO-EROTISM
NARCISM
INCESTUOUS OBJECT CHOICE
NON-INCESTUOUS OBJECT CHOICE
LATENCY
STAGES OF DEVELOPMENT OF OBJECT LOVE
VII OBJECT LIBIDO
V OBJECT LOVE WITH GENITAL EXCLUSION
IV
III PARTIAL LOVE
II NARCISM
I AUTO-EROTISM

Starting from what Freud has taught us in his *Three Contributions to the Theory of Sex*,[4] a book which cannot be praised sufficiently, I put down the different component impulses side by side. You will thus find the two forms of oral eroticism called, respectively, the sucking and the biting form. Then follow the two forms of anal eroticism, of which, the second one, as you know, coincides with the second form of oral eroticism, both depending on the formation and use of the teeth. We know but very little about the first form, but it may be assumed that in combination with the urethral form of genital eroticism, it has to do with the formation of the cloacal theories, which are so familiar to us in the child and show themselves again in the delusions of persecution in paranoid schizophrenia with male patients especially. You may remember that Freud had come to the conclusion that the persecution in paranoid schizophrenia in patients always has a homosexual character and others have pointed out that very often it is an anal persecution.[5] There seemed to be a not too large number of cases in which the persecution is genital and clearly manifests the fear of castration.[6] These cases did puzzle me as fear of castration does not lead to real delusions of persecution and a regression to the narcissistic stage seems to exclude the idea of castration. I found the solution when Dr. Blok, one of our younger psychoanalysts, an assistant at the Leyden University Psychiatric Clinic, presented a case in which the idea of castration changed into the idea of being in the possession of a cloaca, which was to serve as the object of the homosexual persecution. Such a fact could not have been found by clinical psychiatry without the help of psychoanalysts. Of course I had to make the discovery that what I thought to be an original find, had already been hinted at by Freud himself.

Let us get back to our diagram. Next come the different forms of genital eroticism. I already mentioned the urethral form, which, as some of you may know, I take to play an important part in the formation of the masculinity complex in women[7] or, using the

4. Translated by A. A Brill.

5. Freud.

6. Dr. H. C. Jelgersma. Over Waandenkbeelden.

7. J. H. W. van Ophuijsen. Beitrage Zum Männlichkeits Komplex des Weibes. Internat. Zeitschr. f. Psychoanalyse

expression of Freud and Abraham, the rejection of wish-fulfilling denial of the idea of castration. The next stage is that in which the genitals have been discovered as organs of pleasure (secondary autoeroticism) and which as it precedes that important phase, which has been described as the phallic period for reasons which I may suppose are fully known to you, I call the prephallic stage. Nothing needs to be said here on the phallic and post-phallic stages.

You may notice that the list of the component impulses is incomplete. Some of these I had to leave out for want of space, others I purposely omitted, e. g., the sadistic tendency. You may happen to know that I put forward the theory that the violent form of sadism must be considered as issuing from the second form of oral eroticism[8] whereas Abraham[9] has pointed out the intimate relation of sadism in its form of mastery and polluting with the second phase of anal eroticism. According to us both the two forms get into relation with the muscular function later on. Because of its relation there was no need to give sadism a separate place in the diagram.

In a paper read before the Congress of the International Psychoanalytic Association at Hamburg, 1925, I expressed the opinion that those manifestations of an impulse to commit violence on objects of different types which we used to call sadism, should be considered as the outcome of the blending of two impulses of which one was called the true sadism and the other the impulse of hate and aggression. Freud has in his latest book[10] definitely accepted an impulse to aggression and this gives me the right to speak of sadism as a purely erotic impulse with an aim different from that of aggression.

The advantage of placing the component impulses side by side, as in the diagram, is, of course, that we are reminded of the fact that traces of the original component impulses and their offshoots correlated with the function of erotogenetic zones may be found in some form or other, either as neurotic symptoms or perversion, or as a trait of character, or having been sublimated throughout life.

8. Paper read at the Congress of the Internat. Psychoanalytic Association at Hamburg, 1925 (unpublished). See also: Das Sexualziel des gewalttätigen Sadismus, Internat. Zeitschr. f. Psychoanalyse, 1929.
9. Dr. K. Abraham. Vorsuch einer Entwichlungsgeschichte der Libido.
10. Sigmund Freud. Loc cit.

Of course, it is almost impossible to picture the relative constitutional strength of each component impulse nor the modifications through repression, sublimation, character-building and so on.

In this diagram I have dealt with the stages of object-choice in much the same way as I did with the component impulses, and you will find one or the other the stages of auto-incestuous object-choice. Moreover, I have made a tentative attempt to insert the average ages at which the changes in the choice of the object and the organization of the libido are taking place. Of course this is a very weak part of the diagram, but still, it has shown its uses and although I am willing to accept your criticism on this point as probably justified, I thought it necessary to set up some sort of standard, which may be modified, should it be necessary to do so.

Before returning to the question, which was the occasion for my digression, I want to draw your attention to the two parts of a diagram given by Abraham, in his book on "The Development of the Libido" which I inserted and the stages of which pretty well conform with the data borrowed from the works of Freud. Ferenczi's contributions to our knowledge of the function adaptation to reality have also found their place in the diagram, and will occupy our attention later on.[11]

I did not think it necessary to insert in some way the impulse or aggression, dealt with by Freud in his latest book. As a matter of fact, I cannot imagine, how I could find a place for it in this diagram. Moreover, Freud himself gives it a place of its own and considers it responsible for the feeling or consciousness of guilt, whereas he believes the other symptoms in neuroses to be derivatives of the component impulses.

As I have named Freud and Abraham in connection with the question of the stages of libidinal development, I must add a third name, that of Tausk, who, as early as the year 1913, at the Congress of the International Psychoanalytic Association at Munich, called attention to the intimate relationship of the manifestations of narcissism and of anal and sadistic tendencies, which as a glance at the diagram will show you, have their beginning in about the same period of life.

11. Dr. S. Ferenczi. Die Entwicklungsstufen des Wirklichkeitssinnes. Internat. Zeitschrift f. Psychonalyse.

The question we left unanswered was this: What did Freud mean, when, speaking about the development of a compulsion neurosis out of a phobia, he pointed out, that a further regression to the anal erotic stage had taken place?

A glance at the diagram will show you that the process of regression may give rise to several possibilities, of which two will be specially important. The one would be, that a certain preponderating amount of libido would change from one component impulse to an older one, without the choice of the object being affected; the other, that the libido be withdrawn from one object or set of objects belonging to a certain phase of evolution and be poured out over an object belonging to a preceding period.

Both possibilities are known to psychoanalytical experience. It will be at once evident that the former was realized in the case of Freud's patient, who, having first shown the symptoms of a phobia, afterwards acquired a real compulsion neurosis. The mere expression "that she made a regression to the anal erotic stage" might be more or less misleading, as it could imply, that she withdrew her libidinal cathexis from the incestuous objects, which was not the case. What happened was that she replaced the genital or phallic relationships in herŒdipus complex by relationships, governed by anal eroticism.

It is in schizophrenia that we meet with the second form which is a withdrawal of the libido from a set of objects to an object of a preceding period. In the psychoneuroses we found, that the non-incestuous objects were replaced by the incestuous ones; in the case of schizophrenia, the regression goes one step further and the incestuous object is replaced by the narcissistic one. It is however, impossible for the patient to transfer, if the term may be used in this connection, all of his withdrawn libido, on the narcissistic object. There are certain tendencies, repressed after the formation of the super-ego, which cannot at once be taken into the revived narcissistic object. Hence the splitting of the personality. That which has been kept outside, furnishes the material out of which are made the persecutory agents, or others influencing the paranoid delusions.

As an example, we may take the repressed homosexual desire, (as in Schreber's case), to be chosen as an object of love by the

father, or someone who represents the father. When the regression takes place, this desire cannot become conscious as such. Instead, the schizophrenic becomes more than normally aware of a certain sensation in his anus, and he says, first, "They are somehow (by electricity, radio, etc.) working on my anus," and afterwards, "this or that person (representing the father) is trying to have or is having intercourse with me in the anus, using X-rays, for the purpose." It is this sequence of phenomena, which made Dr. Starcke[12] and myself[13] formulate the conception that in reality, the persecutor is the scybalum. You all know the enormous value attributed to the excrement by the primitive narcissism and our observations gave a sound foundation in the phenomena of the autoerotic stage. To the theory of homosexual persecution it is only in the delusion of greatness, which implies the dethronement of the super-ego, that the persecution of influencing has been more or less overcome. I wonder, if any one would assert that these clinical facts could have been found without the help of psychonanalytic experience. After having pointed out that the homosexual object-choice is essential in the formation of the delusion of persecution in men, Freud later accepted that the same holds good for women.[14]

We find in psychoanalytic literature but very scanty corroboration of this opinion and besides Freud himself has shown us in a wonderfully lucid way that their psychosexual development differs from that of men in many respects.[15] This was the reason why I induced Dr. Blok to make a complete clinical investigation, and as thorough a psychoanalytical examination as possible, of a great number of female paranoid schizophrenics. This investigation is still going on, but the results will be published within a few months. With the consent of Dr. Blok, I may tell you, that they seem to lead in the direction of a formulation based on the fact that one form of homosexual object-choice is being made

12. A. Starcke. Die Umkehrung des Libidovorzeichens.

13. J. H. W. van Ophuijsen. Ueber den Ursprung der Empfindung des Verfolgtwendens. Internat. Zeitschrift f. Psychonalyse.

14. Sigmund Freud. Über einen der psychoanalytischer Theorie widersprechender Fall von Paranoia. Internat. Zeitschrift f. Psa.

15. Sigmund Freud. Uber einige psychische Folgen des anatomischen Geschlechtsunterschiedes. Intern. Zeitschri f. Psa. Sigmund Freud. Der Untergang des Œdipus Complex, Thid.

by narcissistic identification. This hint may suffice to show you the different possibilities in the development of woman. Whatever may eventually come out of the investigation, I beg you to consider this communication as belonging to Dr. Blok.

The regression to the narcissistic stage, characteristic of schizophrenia greatly affects the attitude towards reality. At this point, I have the opportunity to speak of Dr. Ferenczi's highly important article on the developments of the reality-function. In the diagram the stages corresponding with the narcissistic period is that of omnipotence by means of magic gestures, and the mere mentioning of it will call to your memory a well-known set of schizophrenic symptoms, this again convincing you of the usefulness of the conception of regression.

Before ending this short and necessarily incomplete survey of what the theory of the regression of the libido has done for clinical psychiatry, I would ask you to cast a last glance on the diagram and I beg you to remember that it is a very rare case indeed, in which the libido in its process of regression entirely abandons a position once occupied. Far more often one sees that parts of it are left behind and this explains the mixed cases, which are by far the most common. You all know those cases of phobia, in which there is just a beginning, not of measures of avoiding the situation, in which anxiety usually shows itself, but of real compulsion symptoms, just as well as you know the compulsion neurosis, which is mixed with slight traces of those strictly conditioned forms of fear, we call phobia.

The same holds good for the psychoses. On the one hand, there are the cases of general paralysis and perhaps the melancholias, in which we must assume that only part of the libido has been regressing to the narcissistic stage, and still show more or less adaptation to reality; on the other hand we know in schizophrenia, catatonic and hebephrenic states which seem to suggest that part of the libido has made an even greater regression than that to the narcissistic stage, thus breaking up the ego itself.

Finally, we must not forget that there is always a possibility of a partial progression from a regressive wish-fulfillment situation as a starting point even in a psychosis. Thus, some of the patients whom I examined with Dr. Blok, had formed a delusion of great-

ness, which brought them symbolically into possession of a penis. During a period in which their illness came to a rest, they formed the prospective delusion, that in a far-away future, they would marry and have children by the person who had been influencing them, thus repeating in the psychosis, the evolution of female sexuality, as sketched by Freud.

I hope to have succeeded in showing you that it has been worth while to gaze back into the past and to realize what clinical psychiatry owes to this single one of Freud's illuminating conceptions.

TREATMENT OF DEMENTIA PRAECOX

With a Report of Six Cases

BY L. S. LONDON, M. D.

Psychiatry is now recognized as a medical specialty which can be practiced outside of an institution. The prognosis of dementia præcox is not regarded as hopeless as it was two decades ago. This is due to the advent of psychoanalysis as a therapeutic agent.

The conception of dementia præcox was dominated for many years by Ziehen, Magnan, von Krafft-Ebing and Kræpelin. It was not, however, until Freud and Jung gave us their conception of the psychosis that we began to understand the mechanism of dementia præcox.

Dementia præcox, or schizophrenia, is a mental disease recognized as a group of symptoms characteristic of regression, either in the emotional, volitional, or intellectual field. This disease is to psychiatry what tuberculosis and syphilis are to general medicine. If we understand the mechanism of dementia præcox, we have a good conception of psychiatry. An analyst without knowledge of psychiatry may be compared to an internist without the knowledge of pathology, or to a surgeon without the knowledge of anatomy.

The diagnosis of the incipient dementia præcox has been considered by the general practitioner as being based entirely on hallucinations. This symptom may be found in any of the psychotic groups, in the psychoneurotic and even in normal individuals (hypnagogic hallucinations). In my experience of over twenty years in mental work, I always look for two characteristics in the early cases of dementia præcox. First, they are highly moral and sensitive, and second, they are subject to sexual conflicts. These characteristics are also observed in the psychoneuroses, but the borderline between the neuroses and the psychoses has not been demonstrated. Let us consider the symptoms of some of the anxieties, hysterias, compulsions, and obsessions and we shall find these symptoms present in the varied types of dementia præcox.

It is therefore necessary in making a careful study in the initial examination that a detailed sexual history be obtained. By sexuality I mean that phase of our energy which has been designated as libido. This energy may be conscious or unconscious sexual

desire, creative energy, "élan vital" or any passionate interest of life force.

Let us assume that the libido or creative energy shows a definite proportion in the normal individual, as in diagram 1.

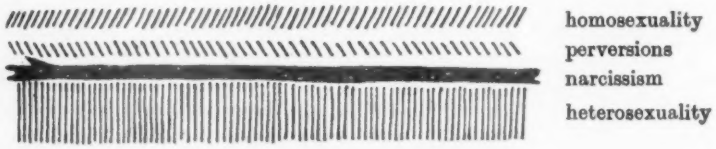


Diagram 1. Mechanism of the normal libido.

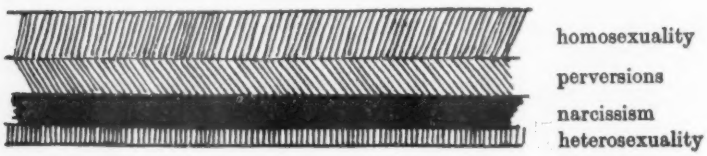


Diagram 2. Mechanism of the libido after traumatization.

Here we see the components of heterosexuality in larger proportion than that of homosexuality, perversions, and narcissism. In diagram 2, there is a disproportion of the components; homosexuality, narcissism, and the perversions have been liberated due to trauma. If we investigate this phase further, we can see that any depletion of the heterosexual constituent of the libidinous urge by virtue of psychic trauma in the moral sphere will cause what the writer has described as a "traumatization of the libido" (1-2). As a result of this injury, the energy is diverted in the augmentation of the other components, at the expense of heterosexuality. (See diagram 2.)

After the trauma occurs, metamorphosis continues, see diagram 3.

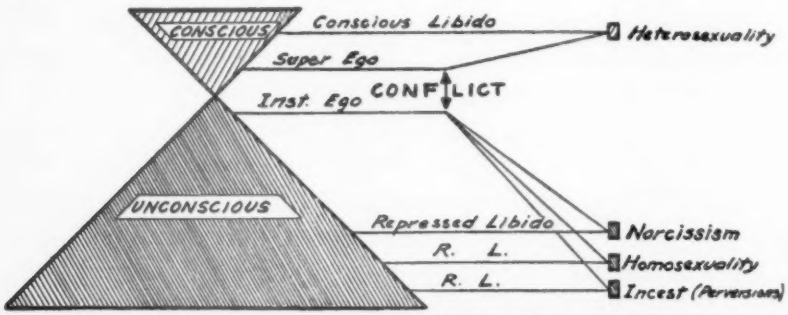


Diagram 3. Mechanism of the ego and libido after traumatization.
Note. The liberated repressed libido is not sanctioned by the ego.

If we study diagram 3, we can see that the libido in its attempt to fixate on heterosexuality, which is conscious and is sanctioned by the super-ego (morals), develops a conflict with the instinctive impulses which are unconscious. As a result of these repressed forces and conscious forces a compromise takes place and symptoms are formed.

If we investigate the early dementia præcox or schizophrenic, we shall always find that his sex life has undergone a "moral shock" and if we study statistical records in our State hospitals we shall find that attacks occur either before or after marriage and that in a great many cases sexuality does not have to be consummated. Sometimes a mere social contact, such as an embrace, or a love affair, will cause the liberation of the latent energy of unconscious and repressed homosexuality, narcissism and the perversions.

I do not wish to burden the reader with the psychosexual pathology of dementia præcox, but those interested can find these details in the references (1-2). However, to show how the injury may occur, I should like to present briefly the report of six cases.

Case 1.—X. Y. Z.: age 38; bank clerk; married.

Family history negative for three generations.

Personal history: He had a business college education and had been employed with one bank for twelve years and with another for over five years.

Present illness began about December, 1924, when he complained of severe headaches and a sensation of heat over the cranium. Several months later these symptoms were followed by ideas of a persecutory nature. He thought the bank officials where he worked did not want him and were conspiring to get him out of the way. He also developed auditory hallucinations. He heard them say "He is nutty." He was advised by the bank physician to take a vacation as they thought he had been overworked. He spent a few weeks in the country resting. He appeared improved on his return, but after an interval of three weeks his headaches recurred, and soon thereafter his auditory hallucinations appeared. He would hear his wife crying while he was in the bank, although she lived miles away. He also heard the bank officials say "He deserves what he gets." The bank physician then advised that

the patient take sick leave again, and suggested electrotherapy, which the patient pursued for three months. This, however, seemed to aggravate the patient's mental condition and he began to develop olfactory hallucinations based on persecutory ideas. He thought that he smelled the odor of dead rats at home. He began to think the superintendent of the cooperative apartment which he owned wanted to get him out of the way and had concealed the dead rats in the walls of the apartment. On another occasion he thought that possibly some one living in the apartment below him had concealed the body of an illegitimate foetus and that this was responsible for the odor. At other times he thought the odor was gas and that some of the officials of the bank had sent messengers to lower the pressure in the gas meter and then cause the gas to escape from the pilot light. This he also thought was the cause of his persistent headaches. These persecutory ideas, which were based on hallucinations, were not fixed but systematized.

The analysis of this case lasted six months, and the following mechanism was disclosed: He had never had real sexual relationship with his wife although he thought he practiced coitus with her. He would lie on her and fear to penetrate her vagina, fearing that she might be injured by his penetration, as he rationalized that she had a floating kidney and that she could not withstand the ordeal of childbirth. These were really homosexual experiences.

His trouble began when he became indiscreet and had sex relations with another woman. This was the first time that the patient experienced the contraction of a vagina. He believed the girl had some mechanism in her vagina which grasped the membrum. It was following this experience that his trouble began, although he had confessed his misconduct to his wife.*

When the mechanism of this case was disclosed to the patient he one day returned smiling, and said: "Do you know, doctor, I really believe I took the virginity of my wife last night." From this time on his condition improved and he recovered. Five years have passed and the patient has had no mental symptoms.

* The writer recently was consulted by an attorney who had been indiscreet, following which he developed a severe anxiety state. He also thought that if he confessed his misconduct to his wife his symptoms would disappear. This he did against the advice of the writer and although his wife forgave him, his symptoms became so acute that he had to be hospitalized. He refused to submit to analytic treatment.

Case 2—A. R.: age twenty-one; single; male; salesman.

Family history negative for two generations.

Personal history: He attended school until fourteen; one term high school, then entered business of brother.

Present illness: Two years before he came to me he developed a state of anxiety; thought that he had swallowed a piece of glass. He had a similar attack one year before. At that time he feared he had developed a disease of the heart and lungs. Of late he has feared to leave the house alone. He had to be taken to his place of business by either his sister or his brother and had to be returned to his home. Recently, while riding in the subway there was a blockade and the patient heard a voice say: "You are going to die, but if you reach Ninety-sixth Street you will live to be one hundred years old." His sexual life is similar to that of other schizophrenics. He masturbated and at the age of eleven had an incestuous relation with his sister, three years older. While she was asleep he put his phallus to her body without awakening her (no doubt she awoke). For several years he worried lest his mother find out, and when he grew older he was ashamed to look at his sister. He has tried on several occasions to indulge in sexual intercourse, always in the company of male friends, but on each occasion he had a premature ejaculation. He has had periods of anxiety while attending theatres. Once while in the theatre with his mother he saw a sketch acted by two men, one of whom masqueraded as the wife of the other. The man came in and shot at the man who was acting the woman. Immediately, cold perspiration came over the patient's forehead, he felt faint and had to leave the auditorium for air. Since then he has had similar experiences while at the theatre or in other places where there were large crowds.

The analysis of this case covered a period of seven months. The mechanism disclosed was that of homosexuality, narcissism and the perversions crowding out heterosexuality. In this case it occurred after his libido was traumatized in its attempt to seek gratification when he became infatuated with a girl at a camp. We know from analysis that there exist morbid fears in young girls and young women. We have called this, crudely, the prostitution complex. They fear their unconscious desire to prostitute them-

selves and therefore fear to go out into open places (agoraphobia).

In this case we see this fear as the determining cause. He was afraid to go out into the street alone. He chose to remain in the house lest he prostitute himself. The symptom of fear of going out was replaced by his unconscious guilt. The homosexual has no fears, for his homosexuality is manifest and his morals allow him to carry out his practices. He will therefore not develop nervous manifestations. Two years have now passed and these symptoms have not recurred.

Case 3—F. S.: age thirty; single; female; secretary.

Family history negative for three generations.

Personal history: The patient had a college education. She has the degrees of B. S. and M. S.

Present illness: She is very suspicious in her initial interview and does not disclose much of her life history. She comes mainly for advice. She does not like her position and admits that six years ago she had a nervous breakdown. Last year she had another attack of nervousness and went abroad for two months. She says she is very shy, and does not associate much with either sex. She has never had any love experience and was never courted or even kissed by a man. She has indulged a great deal in athletics, is fond of swimming and tennis. Recently she has lost interest in these sports. She speaks of being very fat, and describes herself as hideous. (She, however, appears quite attractive and does not show any masculine characteristics, but, on the other hand, shows many feminine traits in her features; she has a well shaped body, hands and legs.) She speaks a good deal of her contempt of men and describes them as animals. She also expresses a paranoid idea about a Mr. X—at the place where she is employed—but is unable to give reasons for entertaining these ideas.

The analysis of this case lasted a year. The dreams, free associations and drawings which she brought disclosed the following mechanism: When she was twenty-three years of age she attended a dance, and while dancing with a man she accidentally felt his genitals. This excited her to such an extent that she had insomnia for several nights. A few days later she was taking a bath and in applying a hose to her body felt a sensation of warmth. She

then applied the hose to her vagina and felt a similar sensation. This led to the development of her masturbation with a hose. She practiced this habit for years, masturbating from three to five times a week, using the hose as a substitute for the phallus. Following these experiences she began to condemn herself for being a female; she could not understand why females menstruated and thought there must be something wrong with her. She wanted to do what men do, and even wondered whether nature had made an error, mixing the souls of boys with the bodies of girls. She thought her mother would have been a good business man. For years she resorted to fantasies or day-dreams. She created various characters—heroes, heroines and dancers. She married these individuals to each other in her thoughts. She also had fantasies of being a boy, and made violent love to her dream girls. She imagined being a man and taking an active part in geological expeditions. Toward the close of the analysis, she spoke a great deal of a light having descended upon her—that she now understood sublimation, God, love and friendship and that she expected to change her concepts. She realized that her creative energy, which was distinctly feminine, had been trying to travel in male channels.

Case 4—Y. Z.: age twenty; female; bookkeeper.

Family history: Father died of tuberculosis at forty-eight. Mother is fifty-three. There are seven members in the family—two sisters, four brothers and the patient. They are all described as being of a nervous temperament, highly excitable and easily dejected.

Personal history: She attended elementary school until fourteen. At eighteen she graduated from high school. Since then she has been employed as a bookkeeper and clerk.

Present illness: For the past year she has had the compulsion to pick her face until it bleeds. She imagines that she has numerous comedones. This idea first came to her two years ago, but recently it has become so aggravated that she fears to leave the house and imagines every one will comment on her looks. She has vague auditory hallucinations. She says she often hears it said, when in the company of girl friends, that she does not use powder and that she has a "funny face." She also displays an unstable mood, giggles foolishly, speaks of being a burden to her

family and talks of suicide. (This is a common thought among all nervous and mental patients.) She also has a bathing compulsion; bathes five or six times a day—and stands for hours gazing in the mirror, searching for comedones, and is never satisfied until she picks her face until it bleeds. At night she has insomnia and keeps her family awake. At times, she admits, she talks to herself.

The analysis of this case lasted about eight months, and the following mechanism was disclosed: She was always shy with boys, and it was only after she left high school that she attended her first party and met her first boy friend. This boy took her home and she allowed him to kiss her. She also allowed him the privilege of putting his arm around her waist and touching her mammae. This experience had a pronounced effect on her, as for several nights she could not sleep. It was following this episode that her symptoms of picking her face began. In the course of the analysis it was ascertained that the patient had an inseparable companion, a girl friend with whom she practiced exhibitionism and unconscious homosexual love. They bathed together, fondled each other and would call each other on the telephone daily. The patient had an unnatural desire for girls, had the "knack," as she said, of picking them up, and had a small notebook which was filled with girls' addresses. She spoke of her hatred for men and of two love affairs, which aggravated her condition. There was also a pronounced incest conflict. She had sexual desires for her brother, and in order to suppress this feeling, which was not sanctioned by her morals, she tried to fixate on homosexuality. This also was not tolerated by her morals and she thus developed the conflict, which substituted the symptoms. After about one hundred hours of analysis this conflict was made known to her, in fact the patient saw it herself, and this caused the dissolution of her conflict and her sublimation in her work and the proper direction of her sexual urge. Two years have now passed and the patient has had no recurrence of her symptoms.

Case 5—S. U.: age twenty-one; single; pharmacist.

Family history: Father is sixty-three, and is described as dominant and excitable. His mother is forty-nine. He describes two uncles as being peculiar. One paternal uncle was insane. There

are two brothers, two sisters and the patient. History otherwise negative.

Personal history: He was born in New York in 1906; graduated from high school and later from a pharmaceutical college.

Present illness: His trouble began about three years ago after he became acquainted with a certain girl. At first he corresponded with her, then gradually they became more attached to each other and saw each other two and three times a week. He realizes that simultaneously with the meeting with the girl there was a general regression of his ambition. He gave up his position in a drug store because he developed the fear of putting poison into the medicines. His greatest fear was of becoming insane and it was this apprehension that impelled him to consult me. For two years he has had that idea. Whenever he heard the word "insanity," or read of it, he was thrown into a panic. He feared certain numbers, such as six or twelve, as there are seven members in his family, and if he died, six would be left. He therefore feared twelve because it was twice six. He complained of other phobias; feared sickness; feared cancer, because an aunt died of this disease. Whenever his father or brother referred to him as "dumbbell" he became excited. He feared colds, and feared to walk to the right or left, and feared the soles of his feet striking each other. He feared numbers five and thirteen. Whenever he heard the word "nuts" he immediatley associated it with the word insanity, and if someone spoke to him of it he became worried.

The analysis of this case was of one year's duration. The mechanism disclosed was that of incest, homosexuality, and the perversions. This occurred after his libido had been traumatized and these instinctive forces liberated from the unconscious. These instinctive impulses, not being sanctioned by his morals (superego), the patient developed the delusion that the girl he was in love with was a man in disguise, and he often palpated her breasts to ascertain whether it was a fact. This patient made a perfect heterosexual adjustment and for the past two years has been well.

Case 6—J. W.: age nineteen; clerk; single.

Family history: His paternal grandmother and grandfather died of old age; his father is over forty and well. His mother is about the same age and considered well. There are a girl and two boys,

family and talks of suicide. (This is a common thought among all nervous and mental patients.) She also has a bathing compulsion; bathes five or six times a day—and stands for hours gazing in the mirror, searching for comedones, and is never satisfied until she picks her face until it bleeds. At night she has insomnia and keeps her family awake. At times, she admits, she talks to herself.

The analysis of this case lasted about eight months, and the following mechanism was disclosed: She was always shy with boys, and it was only after she left high school that she attended her first party and met her first boy friend. This boy took her home and she allowed him to kiss her. She also allowed him the privilege of putting his arm around her waist and touching her mammae. This experience had a pronounced effect on her, as for several nights she could not sleep. It was following this episode that her symptoms of picking her face began. In the course of the analysis it was ascertained that the patient had an inseparable companion, a girl friend with whom she practiced exhibitionism and unconscious homosexual love. They bathed together, fondled each other and would call each other on the telephone daily. The patient had an unnatural desire for girls, had the "knack," as she said, of picking them up, and had a small notebook which was filled with girls' addresses. She spoke of her hatred for men and of two love affairs, which aggravated her condition. There was also a pronounced incest conflict. She had sexual desires for her brother, and in order to suppress this feeling, which was not sanctioned by her morals, she tried to fixate on homosexuality. This also was not tolerated by her morals and she thus developed the conflict, which substituted the symptoms. After about one hundred hours of analysis this conflict was made known to her, in fact the patient saw it herself, and this caused the dissolution of her conflict and her sublimation in her work and the proper direction of her sexual urge. Two years have now passed and the patient has had no recurrence of her symptoms.

Case 5—S. U.: age twenty-one; single; pharmacist.

Family history: Father is sixty-three, and is described as dominant and excitable. His mother is forty-nine. He describes two uncles as being peculiar. One paternal uncle was insane. There

are two brothers, two sisters and the patient. History otherwise negative.

Personal history: He was born in New York in 1906; graduated from high school and later from a pharmaceutical college.

Present illness: His trouble began about three years ago after he became acquainted with a certain girl. At first he corresponded with her, then gradually they became more attached to each other and saw each other two and three times a week. He realizes that simultaneously with the meeting with the girl there was a general regression of his ambition. He gave up his position in a drug store because he developed the fear of putting poison into the medicines. His greatest fear was of becoming insane and it was this apprehension that impelled him to consult me. For two years he has had that idea. Whenever he heard the word "insanity," or read of it, he was thrown into a panic. He feared certain numbers, such as six or twelve, as there are seven members in his family, and if he died, six would be left. He therefore feared twelve because it was twice six. He complained of other phobias; feared sickness; feared cancer, because an aunt died of this disease. Whenever his father or brother referred to him as "dumbbell" he became excited. He feared colds, and feared to walk to the right or left, and feared the soles of his feet striking each other. He feared numbers five and thirteen. Whenever he heard the word "nuts" he immediatley associated it with the word insanity, and if someone spoke to him of it he became worried.

The analysis of this case was of one year's duration. The mechanism disclosed was that of incest, homosexuality, and the perversions. This occurred after his libido had been traumatized and these instinctive forces liberated from the unconscious. These instinctive impulses, not being sanctioned by his morals (superego), the patient developed the delusion that the girl he was in love with was a man in disguise, and he often palpated her breasts to ascertain whether it was a fact. This patient made a perfect heterosexual adjustment and for the past two years has been well.

Case 6—J. W.: age nineteen; clerk; single.

Family history: His paternal grandmother and grandfather died of old age; his father is over forty and well. His mother is about the same age and considered well. There are a girl and two boys,

including the patient, in the family. There is no heredity in the immediate or collateral members of the family.

Personal history: He was born in New York City; has had a common school education and three years' high school. He noted difficulties in high school, although in the grammar school he was considered one of the brightest students. He is well nourished, is almost six feet tall and muscular.

Present illness: Began over two years before the patient's visit to me when he was occupying the same room with his sister, three years younger. He says his sex life was aroused, and he became very passionate and frequently had desires to cohabit with his sister. He never had a sexual experience. On one occasion when he thought of having a sex experience with his sister he had an ejaculation. He has masturbated at very infrequent intervals, as he feared the loss of his semen and his manhood. He says he is extremely shy in the presence of girls and calls himself neurotic. He also said that he was full of conflicts. Whenever he saw a girl, a cold, clammy sweat crept over his forehead and he lost his speech. He has attended neurological clinics and has tried self-analysis. At one of the clinics he was told that psychoanalytic literature would do him harm and he was advised to throw it away. He stammered, laughed in a silly manner, exhibited an indifferent mood, and had a mannerism of covering his left eye with his hand. He admitted talking to himself. Later on in the analysis some of his paranoid ideas were ascertained. He thought that he was a genius like Shakespeare, that he had musical abilities equivalent to Beethoven's and that he was Christ. He exercised vigorously and wanted to be exactly six feet tall. (Christ is said to have been exactly six feet tall.) His blond hair and features resembled those of Christ.

The analysis of this case was protracted and of fifteen months' duration, but an excellent result was obtained. It was disclosed that the libido of this boy had been traumatized by his sister, and the components of homosexuality, narcissism and the perversions (incest) were liberated. He thought he was of divine birth, and it was only after a year's analysis that he saw why he had chosen the delusion that he was Christ. He had not understood that his mother, whom he compared to the Virgin Mary, could have borne

three children. He had a marked attachment for his mother (Œdipus complex) and an excessive hatred for his father. He made a perfect heterosexual adjustment. His refuge in a psychosis was to escape the liberation of the components, homosexuality, incest, and the perversions.

Summary and Conclusions

Modern psychiatry has demonstrated that these cases can be adjusted by psychoanalytic procedures, but the technique is by no means an easy one. It requires a superabundance of patience together with a vast knowledge of the unconscious mind in normal and abnormal psychology.

Jung was the first to show that this work is a creative effort, and that the treatment of dementia præcox is based entirely upon the empirical knowledge gained from a study of the neuroses. There are two essentials necessary for the successful treatment of dementia præcox: First, we must get the patients in what Jung calls a "liquid condition," that is, not yet congealed; second, to be able to diagnose them requires years of experience and an intuitive process that can only be attained by psychiatrists who study the early dementia præcox.

The restoration to an adjustment then consists in a reintegration of the dissociated psychic entities (readjustment of the libido). The libido if injured by a *moral* shock will seek its gratification in other channels. Making known the raging unconscious forces to consciousness is not sufficient to effect an adjustment. The morals of these unfortunate beings must be altered.

Bibliography

1. London, L. S. Traumatization of the libido, with the report of three cases. Psychoan. Rev. Vol. XVI, No. 2, 1929.
2. London, L S. Traumatization of the libido. Further studies, with the report of two cases. Brit. J. M. Psychol. Vol. IX, Part 4, 1929.

HOSPITAL DEPARTURES AND READMISSIONS AMONG MENTAL PATIENTS DURING THE FIFTEEN YEARS FOLLOWING FIRST ADMISSION*

BY RAYMOND G. FULLER,

DIRECTOR, STUDY OF THE OCCURRENCE AND SOCIAL SIGNIFICANCE OF MENTAL DISEASES IN NEW YORK STATE[1]

Out of 993 deaths occurring among a group of mental patients whose hospital history was traced for 15 years following their first admission, 274 occurred within three months after reception, 477 within one year, and 783 within five years. Out of 982 discharges not followed by readmission, 283 took place in the first three months of hospital life, 650 in the first year, and 886 in the first quinquennium. While these "final discharges," as we shall call them, may not correspond exactly with permanent recoveries, the data on which this and a preceding article are based suggest that they are probably a truer indication of the prospects than the designation of condition on discharge as recorded on the hospital books.

The critical character of the first year, and indeed of the first few months, in the hospital history of mental patients generally, and of certain clinical groups particularly, is scarcely new to psychiatric knowledge; but little, if anything, had been done to discover and exhibit the statistical facts of the matter before Dr. Pollock, in 1925, reported on "What Happens to Patients with Mental Disease During the First Year of Hospital Life."[2] The hints afforded by this monograph led to the development, with the aid and counsel of Dr. Pollock, of a more extensive plan of study, in the conduct of which we have followed a larger number of first admissions through a longer period of observation. We have added to the scope, rather than changed the essential methodology of the prior inquiry, and have determined what happens to mental patients during the first 15 years of hospital life—and when it happens.

* Based upon the experience of the New York Civil State Hospitals.

1. This study, undertaken by the New York State Charities Aid Association in close cooperation with the State Department of Mental Hygiene, was made possible by a grant of funds from the Laura Spelman Rockefeller Memorial. Dr. Horatio M. Pollock, director of the Statistical Bureau of the Department of Mental Hygiene, must be credited with a large share, as consultant of the study, in the planning and guidance of the several projects included in the general program, though he is not to be held responsible for shortcomings or errors in the conduct of work and preparation of results. This article is a second report on one of the projects.

2. Pollock, H. M.: "What Happens to Patients with Mental Disease During the First Year of Hospital Life." STATE HOSPITAL QUARTERLY, August, 1925.

The value of a 15 years' exposure to observation is not limited to clarifying the importance of the earlier, relatively to the later, periods of history after first admission. True, the eventfulness of the earlier periods is strikingly revealed by contrast with the comparative uneventfulness of the later periods. But beyond this, we are enabled to obtain, from extended observation, a more accurate knowledge of the outcome of mental cases, their final disposition, so far as contact with the hospitals is concerned; and useful clues are afforded, by a long-time study of departures, readmissions and number of patients remaining under hospital care, for the estimation of the number of beds required in the future for the care and treatment of newly admitted cases.

Our selection of cases is based on the records of first admissions to the civil State hospitals of New York, on file in the Statistical Bureau of the Department of Mental Hygiene. The data pertaining to subsequent events in the hospital history of the patients under consideration are derived from the same statistical files, and relate exclusively to the same group of institutions, namely, the civil State hospitals regarded as a unit. Our findings, in part, have been published under the title, "Expectation of Hospital Life and Outcome for Mental Patients on First Admission,"[3] a first report of the study which for brevity and convenience may be called our "yearly progress study."

In that article we showed, for each of the six clinical groups having the largest proportions of first admissions to the civil State hospitals, and for an undifferentiated group comprising cases from all diagnostic classes, what had happened up to the end of various periods, to a maximum of 15 years from the date of first admission. Here, on the other hand, the same events of hospital history—deaths, discharges, "final discharges," and readmissions—are shown for separate, successive periods within the same 15-year span; while discharges and "final discharges" are shown with reference to the recorded condition of the patients on leaving hospital (or rather on receiving their discharge, usually after parole).

Thus, although this article may be regarded as complementary to the preceding one, there are differences in the material utilized as well as in the manner of treatment. Both are parts of the same

3. Fuller, R. G.: "Expectation of Hospital Life and Outcome for Mental Patients on First Admission." PSYCHIATRIC QUARTERLY, April, 1930.

study—progress of cases after first admission—and both deal primarily with separations from hospital. In the earlier paper, however, the number of original patients who were still on the hospital books, whether after continuous or discontinuous residence, at the expiration of given periods after entering hospital, was especially emphasized; and here we are paying some attention to the number of readmissions.

The tables presented in the paper on expectation of hospital life and outcome were constructed with the data cumulated to the end of each time interval; in the accompanying tables, the data are shown for the most part non-cumulatively, so as to furnish a clearer comparison of the several divisions of time with respect to the occurrence of egressions and readmissions. With the exception of this important difference between cumulation and non-cumulation of data, the time intervals are the same; or perhaps it would be clearer to say that the points of division are identically placed, our tables in the earlier paper being concerned with results of group history up to each point of division of the 15 years, while here they exhibit the events of group history between one dividing point and the next in the series. In our principal tables we are showing the events of each quarter of the first year, each year of the first quinquennium of the period of observation, and each quinquennium of the whole 15-year period.

The data employed in both papers relate to the same groups and the same individuals: 600 consecutive first admissions of each sex in each of six clinical groups (manic-depressive psychoses, dementia præcox, senile psychoses, psychoses with cerebral arteriosclerosis, alcoholic psychoses, and general paralysis),[4] and an additional group of 1,200 consecutive first admissions of each sex representing all the psychoses, the latter being distributed in the proportions shown by the several psychoses among the first admissions during the three years ended September 30, 1912. The selection period from which the 9,600 cases under consideration were drawn coincides, rather roughly, with these three years.

It is important to understand that the undifferentiated, or "all psychoses," group, is not a combination of the cases comprising the

4. Slightly more than 75 per cent of the total first admissions to the civil State hospitals during the series of fiscal years ending in 1909 to 1928 inclusive belong to the six clinical groups specifically mentioned.

six other groups included in the study; nor is its composition limited to the diagnostic classes from which those cases are drawn. The "all psychoses" group, as its name implies, runs the whole gamut of the list of 22 designations used in classifying patients admitted to the hospitals which report to the New York State Department of Mental Hygiene.[5] This mixed, undifferentiated group is representative of each and all of the diagnostic classes; at least, no class is denied its representation on the proportionate basis already explained. In view of the fact that a new official classification of psychoses went into effect in 1917, some years after the admission of the patients comprising our seven groups, it may be said, regarding the selection of cases by diagnosis, that we worked directly from the statistical cards in use by the Department for the keeping of patient records, these cards having been refiled, for the years 1909 to 1917, in accordance so far as possible with the current diagnostic classification, and that no cognizance was taken of doubtful cases.

It may be desirable to make clearer what we mean by the period of observation. The selection period, for each sex of each clinical designation, began on October 1, 1909, or as soon thereafter as a first admission occurred, and continued over a sufficient length of time to embrace the requisite number of consecutive first admissions for the purposes of the study. Naturally the concluding dates of the different series of first admissions vary; but this does not mean that the cases were studied over varying periods of time. With exceptions to be noted, all cases were studied over equal periods up to a maximum of 15 years. The first admission of the selected cases fell within the period from October 1, 1909 to June 30, 1913, usually nearer the former date than the latter; but the history of a patient admitted as late as June 30, 1913, would be traced over a period of 15 years' duration, since our final check of the card records in the Statistical Bureau was made as of June 30, 1928. Our tables record the events of hospital history during not less than 15 years, and the recorded history, as presented in the tables, is cut off at the end of 15 years. Of course it is to be understood that individual patients drop out of the picture all the way along, having an actual hospital history of less than 15 years. The time

5. See the "Statistical Guide," Eighth Edition, published by the Department in the interest of uniform reporting and central record-keeping. The card-record system of the Statistical Bureau was briefly described in the preceding article.

of their permanent departure by death or discharge is shown in the tables.[6]

Observation of cases involves a vital point in the method of study. Our years of observation (or of history), to which the time intervals in the accompanying tables relate, are what Dr. Pollock has called "hospital years," as distinguished from "calendar years." That is, a year of hospital history is not reckoned on the basis of a first admission in 1910, for example, and a death or discharge occurring in 1911; nor on the basis of a first admission in a certain fiscal year and a death or discharge in the ensuing fiscal year. Time is figured exactly from the actual date of first admission of each individual patient to the actual date of that patient's discharge, death or readmission, if such an event occurred. Thus the time in years (and in months) as shown in the tables means definite periods in each individual case, the observation beginning with first admission. This method seems preferable to that of taking a group of admissions of a calendar or fiscal year and reckoning the time from the middle point of the year, or from the end of the year, as is sometimes done.

In sum, while there was a shorter interval between the date of the first and that of the last of the consecutive first admissions in the manic-depressive than there was in the alcoholic group (merely to take examples), our tables are so constructed, in accordance with the method of study, that one year or five years of history as shown for the manic-depressive group is strictly comparable with one year or five years for the alcoholic group; the same may be said of all periods and all groups in the tables except the third quinquennium of the alcoholic and arteriosclerotic groups.[7] "Strictly compar-

6. The dates mentioned as compassing the period of selection are significant primarily as indicating in a general way when, as a matter of recency, the patients studied were admitted; patients admitted at a later time might fare differently, by reason perhaps of improved care and treatment, and in a subsequent paper we are treating the hospital history of mental patients whose first admissions occurred in a later selection period, though we shall have an exposure to observation of only five years in all individual cases instead of having one of 15 in all, or practically all, individual cases. The forthcoming paper to which we refer will constitute a third report on the "yearly progress study" considered as a whole. One might, indeed, suggest the possibility that patients admitted toward the end of the selection period here under discussion would possess a slight advantage in prospective outcome over those admitted near its beginning, but this objection does not seem to us to be well founded.

7. The fact that a few of the female alcoholic, a few of the male arteriosclerotic, and a somewhat larger number of the female arteriosclerotic patients were admitted after June 30, 1913, completing the quota of 600 original cases in each instance, means that the entries of data in the tables for alcoholics, male and both sexes, and arteriosclerotics, male, female and both sexes, are slightly in error for the third quinquennium. Nevertheless, most of these cases were observed for the entire 15 years, and all of them for 12 to 14 years; and it is also to be borne in mind that only a very few cases, in these groups, remain in the picture as the subjects of even potential future happenings after the first 10 years, or indeed after the first five.

able," inasmuch as a "hospital year"—taken as a unit of measurement as well as a method of study—is always the same in one case as in another, and therefore the same in one group as in another. If the reader will pardon the repetition, the time intervals into which the 15-year period is divided in the tables show hospital history in terms of this unit.

Many of our cases, it is true, were actually observed for more than 15 years, some over as long a period as 18 years and nine months.[8] But this maximum is noteworthy only in connection with our category of "final discharges." No division of time beyond the end of 15 years is used in the tables, but attention must be paid to the fact that "finality" of discharge is determined by the non-appearance, after discharge, of the cases in question on the Department records up to and including June 30, 1928. A patient registered in the tables as having been finally discharged in the first year of hospital life may be said to have had no further connection with the hospital system during a subsequent period of somewhere between 14 years and 17 years, nine months. But it is still to be remembered that the "final discharges" recorded in the tables all occurred within the fifteen-year stretch from the time of first admission.

"Deaths," as recorded in the tables, refer to deaths in hospital. "Readmissions," like all other events, refer only to the civil State hospitals, not to any other institutions in this State, or to institutions in any other state. Finality of discharges must be construed subject to the same qualification, which, be it said, from evidence in hand, can be productive of but slight error in the significance of the tables. Of the occurrence of deaths after discharge, out of hospital—a factor which of course would influence the number of readmissions—we have no knowledge from the data of the "yearly progress study." It may be mentioned, however, that in field studies under way, we are tracing the post-discharge history of mental patients during a period of 10 years, and from the data thus obtained we shall be able to show the number of deaths occurring out of hospital among discharged patients.

"Discharges" and "readmissions" in the present tables relate to the number of such events in the group history, and do not agree

8. The broken part of a year, nine months, is due to the fact that the fiscal year of the Department, formerly ending September 30, was changed so that it now comes to a close on June 30. The card records of the Statistical Bureau were examined up to the end of the last fiscal year for which they were complete, namely the fiscal year which closed on June 30, 1928.

with the number of different patients discharged or readmitted, as a single patient may be discharged and readmitted several times. This distinction, vital to other studies under way in our general program of research, is not observed here, since our immediate concern is rather with the groups, as such, than with the individuals, as such. As intimated, however, it will be observed in subsequent studies, where individual histories will be precisely followed, step by step, and the findings presented in composite form without any loss of connection between individuals and events. We do not wish to stretch the significance of our "yearly-progress" data beyond their real import, but we may properly point out that their limitations are partly due to the specific purpose, and hence the limited scope, of this particular study.

Our principal series of tables deals separately with the seven selected groups of mental patients; and, as already implied, shows the frequency of certain occurrences in certain periods, these occurrences pertaining to the members of the original groups of patients with whose first admission the group histories begin. We are using absolute numbers without percentages, in contrast with our procedure in the preceding article. There we showed, by means of percentages, an expectancy of various specified events and outcomes within given periods after first admission up to the end of 15 years; and the data here offered in the form, so to speak, of raw material, lend themselves to still further analysis—all tending, at least, in the direction in which, as Dr. James V. May declared many years ago, statistical research should go if we are ever to know the ultimate outcome of hospital admissions.

"The recovery rate," Dr. May wrote, "has been estimated as based on the number admitted for the year, the average daily population, the whole number treated, the number discharged and the rate per thousand or ten thousand of the admissions, etc. All of these methods are, to say the least, unreliable, if not absolutely misleading. The total number of recoveries includes those occurring in the whole population under treatment representing the accumulation of years in the form of various psychoses from which no recovery can possibly be expected, such as epileptics, seniles, imbeciles, and the terminal stages of various other conditions. The recoveries from this total population have little if any real relation to the number admitted during the year. It would be highly desirable if, from a given thousand or ten thousand consecutive admissions, accurate and definite reports could be obtained showing how many are discharged improved or recovered, how many die, and what percentage become permanent residents of our chronic wards. Only such statistics can accurately determine the real recovery rate or give us any definite idea as to the ultimate disposition of the cases admitted.[9]

9. James V. May: "Statistical Studies of the Insane," in *American Journal of Insanity*, October, 1913, Vol. LXX, No. 2.

The percentages of our paper on "Expectation of Hospital Life and Outcome" constitute, in effect, rates of a rather definite and instructive sort. Though in our opinion the general method of selection and observation which we have adopted in the yearly progress study is well suited to the purpose which Dr. May had in view, we recognize that we are not quite in position, by reason of the acknowledged limitations of the data in hand, to give intensive and adequate treatment to the problem of a "real recovery rate," or for that matter of a real readmission rate; but we are taking up the question of such rates, more fully, in a paper based on another assemblage of data, involving a still larger number of cases, and—what is of paramount importance—preserving the actual relationship of the events of hospital history to the particular persons affected. This latter difference in the method of study will give us more detailed information both as to the post-admission and as to the post-discharge history of individual patients, so far as the hospital records are concerned; while our follow-up studies in the field will tell us what happens to discharged patients out in the community. But the yearly-progress data are not without their own significance from the standpoint of rates, as will be pointed out in the following discussion.

Our initial, or primary, aim in the yearly-progress study has admittedly been served by the article previously published; and though the absolute numbers of the accompanying tables, which contain additional material, invite the further calculation of rates, ratios, and percentages, our object here is chiefly to make readily available to students the basic information obtained. But because of differences in the construction of the tables, and because the tables show data not previously shown, this article, we trust, performs something more than the function of a postscript or appendix. Psychiatric interpretation is not attempted in our commentary on the tables. One reason why we are not figuring percentages, in the principal tables, is the smallness of the numbers appearing in the tabular spaces after the first year and after the first five years. The data, as we have said, are not cumulated, but show the actual number of events in each of the different periods. Since these tables, however, do show the number of original patients considered in each diagnostic group, also the total of each category of

events in 15 years, significant numerical relationships may often be seen at a glance.

With this rather lengthy explanation of the data—the method of study, the categories employed, and the general objectives—we may now turn to a brief statement of salient facts disclosed by the tables. Each diagnostic group might well be considered separately, but we shall confine our commentary largely to comparisons of groups with regard to the several classes of events shown by the tables, and shall try to avoid over-repetition of factual generalizations contained in the preceding article. It is suggested to the reader that a study of the table dealing with the history of the "all psychoses" group will be worth while for purposes of a 15-year view of what happens to the general run of patients after first admission. This makes the seventh of the series of principal tables, the first six having to do with the manic-depressive, dementia præcox, senile, arteriosclerotic, alcoholic and general paralysis groups. A summary table recapitulates these seven tables for certain periods and for both sexes combined.

There is much in common, in a general way, in the history of the several groups. The frequency of the occurrence of deaths and of final discharges is greater, relatively to the number in 15 years, during the first year after first admission than during any succeeding year, and greater during the first five years than during any succeeding quinquennium. This is true of every diagnostic group, including the "all psychoses" or undifferentiated group; and of each sex, and both sexes. Final eliminations from the hospital system (deaths and final discharges added together) naturally follow the same general rule. This is an important fact from the administrative standpoint, relating as it does to the reduction of the number of original patients continuing under hospital care.

In all groups, the number of deaths, and the proportion of deaths among all deaths in the first year, is greater in the first quarter than in any succeeding quarter of the first year. This may also be said of final discharges, except as to male arteriosclerotics and female alcoholics. The number of deaths in the first three months of hospital life is greater than in any single year after the first in all groups but dementia præcox, where it is equalled by the number of deaths in the fourth year. In all groups there are more final dis-

charges in the first three months than in any single year after the first.

It may be seen from the tables that among the 1,200 manic-depressives there are 73 deaths in the first six months, as compared with 84 in the first year inclusive of the first six months; among dementia præcox, patients, 30 deaths occurred in the first six months, 45 in the first year; in the senile group, 436 in six months, 568 in the first year; arteriosclerotic, 383 in six months, 523 in the first year; alcoholic, 122 in six months, 142 in the first year; general paralysis, 319 in six months, 467 in the first year; "all psychoses," 361 in six months, 477 in the first year. In the manic-depressive group, 304 of the 493 final discharges occurring in the first year took place in the first six months; in dementia præcox, 166 out of 222; senile, 59 out of 96; arteriosclerotic, 71 out of 130; alcoholic, 313 out of 511; general paralysis, 82 out of 131; "all psychoses," 438 out of 650. The totals of deaths and of final discharges in 15 years, by diagnostic groups, will be found in the summary table at the end of this article.

The number of final discharges exceeds the number of deaths, in the first three months, the first year, and the first five years, for each sex and both sexes, in the manic-depressive and dementia præcox groups. So also of the alcoholic group, for males and both sexes, but not for females. In "all psychoses" there are slight divergencies, but no great differences at any point. The totals for deaths and final discharges in the whole 15 years are nearly equal in "all psychoses," markedly as to both sexes. With regard to senile, arteriosclerotic, and general paralysis cases, the deaths are much greater in number than the final discharges, for each sex and both sexes, and for the first three months, the first year, the first five years, and the whole 15. Indeed, they far exceed the total discharges, final and non-final combined.

Deaths, as one would expect, are more numerous in the total for senile (1,039), arteriosclerotic (964), and general paralysis (891) cases than for alcoholic (304), dementia præcox (300), and manic-depressive (212). Each of these groups consists originally of 1,200 first admissions (both sexes). The "all psychoses" group, with double the number of first admissions, shows 993 deaths in 15 years. Senile, arteriosclerotic, and general paralysis deaths show a

greater tendency to occur in the first year, and in the first five years, than deaths in "all psychoses," and a greater tendency in "all psychoses" than in alcoholic, manic-depressive and dementia præcox. Considering only deaths of the first year, the alcoholic groups shows the largest proportion occurring in the first three months, with manic-depressives second, and "all psychoses" third. The female alcoholics apparently are more likely to die soon after admission (in the first three months or the first year) than are the males, suggesting that they arrive at the hospital in a less hopeful condition.

It is interesting to note that while manic-depressive deaths exceed deaths among dementia præcox patients in the first three months, the first year, and the first five years, the situation is reversed at the end of 15 years. In the first three months the deaths among arteriosclerotics equal the deaths in "all psychoses," senile deaths being greater in number; but at the end of 15 years, "all psychoses" deaths fall between the number of senile and the number of arteriosclerotic deaths. We may also observe that though a larger number of deaths in the first three months occurs in the senile and arteriosclerotic groups than in the alcoholic group, the percentage of alcoholic deaths in 15 years occurring in the first three months is higher than for any other group.

The deaths among dementia præcox patients show the most even distribution as among the three quinquenniums. This is especially noticeable for both sexes together. Death, if it occurs in the hospital, is more likely to be deferred than in the other groups; but of course dementia præcox patients are more continuously resident in hospital than manic-depressives, who rank next in evenness of the distribution of deaths. Alcoholics rank third in this respect, but as has been noted, those who die early tend to die very early, especially the females. The alcoholic group, it may be noted, has the highest number of final discharges in the first five years, the manic-depressives ranking next, but having the largest number of readmissions in each quinquennium.

TABLE I—MANIC-DEPRESSIVE PSYCHOSES. FREQUENCY OF CERTAIN EVENTS IN THE HOSPITAL HISTORY OF PATIENTS DURING SPECIFIED PERIODS AFTER FIRST ADMISSION

Period	Recovered Total	Recovered Final	Discharges as Much improved Total	Much improved Final	Improved Total	Improved Final	Discharges, other conditions Total	other conditions Final	Discharges, all conditions Total	all conditions Final	Deaths	Readmissions
MALE—600 CASES												
First 3 months..	66	52	18	14	30	24	17	16	131	106	25	4
Second 3 months	87	55	7	5	12	9	5	2	111	71	8	5
Third 3 months..	77	42	8	5	7	6	1	1	93	54	4	5
Fourth 3 months	51	28	3	1	5	3	..	..	59	32	1	7
First year.....	281	177	36	25	54	42	23	19	394	263	38	21
Second year....	58	31	12	5	19	12	4	3	93	51	10	38
Third year.....	30	17	9	6	6	3	1	1	46	27	7	20
Fourth year.....	19	6	1	..	2	2	1	..	23	8	8	21
Fifth year.....	12	8	3	..	1	1	2	..	18	9	5	14
First 5 years...	400	239	61	36	82	60	31	23	574	358	68	114
Second 5 years..	64	25	13	5	6	2	2	1	85	33	26	114
Third 5 years...	32	18	13	6	4	2	1	1	50	27	10	50
Total 15 years	496	282	87	47	92	64	34	25	709	418	104	278
FEMALE—600 CASES												
First 3 months..	42	29	13	10	23	21	24	21	102	81	31	3
Second 3 months	70	39	2	.	8	4	5	3	85	46	9	4
Third 3 months..	69	42	8	5	5	3	1	1	83	51	4	4
Fourth 3 months	68	44	5	2	4	3	3	3	80	52	2	9
First year.....	249	154	28	17	40	31	33	28	350	230	46	20
Second year....	69	45	7	7	10	8	5	3	91	63	7	29
Third year.....	30	14	9	4	4	1	3	3	46	22	6	19
Fourth year....	13	4	5	3	3	1	..	..	21	8	4	24
Fifth year.....	10	2	5	1	1	1	..	..	16	4	5	15
First 5 years....	371	219	54	32	58	42	41	34	524	327	68	107
Second 5 years..	67	22	10	4	2	2	..	..	79	28	22	100
Third 5 years...	47	27	5	..	3	2	1	..	56	29	18	52
Total 15 years	485	268	69	36	63	46	42	34	659	384	108	259
BOTH SEXES—1,200 CASES												
First 3 months..	108	81	31	24	53	45	41	37	233	187	56	7
Second 3 months	157	94	9	5	20	13	10	5	196	117	17	9
Third 3 months..	146	84	16	10	12	9	2	2	176	105	8	9
Fourth 3 months	119	72	8	3	9	6	3	3	139	84	3	16
First year.....	530	331	64	42	94	73	56	47	744	493	84	41
Second year....	127	76	19	12	29	20	9	6	184	114	17	67
Third year.....	60	31	18	10	10	4	4	4	92	49	13	39
Fourth year....	32	10	6	3	5	3	1	..	44	16	12	45
Fifth year.....	22	10	8	1	2	2	2	..	34	13	10	29
First 5 years....	771	458	115	68	140	102	72	57	1098	685	136	221
Second 5 years..	131	47	23	9	8	4	2	1	164	61	48	214
Third 5 years...	79	45	18	6	7	4	2	1	106	56	28	102
Total 15 years	981	550	156	83	155	110	76	59	1368	802	212	537

TABLE II—DEMENTIA PRÆCOX PSYCHOSES. FREQUENCY OF CERTAIN EVENTS IN THE HOSPITAL HISTORY OF PATIENTS DURING SPECIFIED PERIODS AFTER FIRST ADMISSION

Period	Recovered Total	Recovered Final	Discharges as Much improved Total	Much improved Final	Improved Total	Improved Final	Discharges, other conditions Total	other conditions Final	Discharges, all conditions Total	all conditions Final	Deaths	Readmissions
MALE—600 CASES												
First 3 months..	3	2	10	8	15	12	64	56	92	78	6	2
Second 3 months	11	4	12	7	14	7	13	9	50	27	3	6
Third 3 months.	9	1	12	7	9	4	5	3	35	15	5	4
Fourth 3 months	9	3	10	4	15	8	2	1	36	16	..	9
First year	32	10	44	26	53	31	84	69	213	136	14	21
Second year	7	2	20	9	25	11	10	8	62	30	4	31
Third year	3	1	7	2	15	12	11	8	36	23	7	20
Fourth year	..	..	7	1	7	4	2	2	16	7	11	8
Fifth year	4	3	6	3	6	3	3	2	19	11	3	14
First 5 years....	46	16	84	41	106	61	110	89	346	207	39	94
Second 5 years..	2	1	8	3	16	7	4	2	30	13	51	34
Third 5 years...	5	3	12	9	6	5	3	2	26	19	33	25
Total 15 years	53	20	104	53	128	73	117	93	402	239	123	153
FEMALE—600 CASES												
First 3 months..	2	..	1	1	18	15	35	28	56	44	14	2
Second 3 months	6	1	6	3	17	9	7	4	36	17	7	2
Third 3 months..	5	3	7	4	13	6	5	3	30	16	7	4
Fourth 3 months	6	1	6	3	6	3	4	2	22	9	3	6
First year	19	5	20	11	54	33	51	37	144	86	31	14
Second year	5	2	13	9	22	18	13	9	53	38	10	12
Third year	2	2	1	..	8	7	4	2	15	11	6	14
Fourth year	4	2	7	3	3	2	3	2	17	9	9	7
Fifth year	1	..	6	2	10	4	2	2	19	8	12	8
First 5 years....	31	11	47	25	97	64	73	52	248	152	68	55
Second 5 years..	1	..	11	6	12	6	4	2	28	14	55	34
Third 5 years...	2	2	10	10	11	7	..	..	23	19	54	20
Total 15 years	34	13	68	41	120	77	77	54	299	185	177	109
BOTH SEXES—1,200 CASES												
First 3 months ..	5	2	11	9	33	27	99	84	148	122	20	4
Second 3 months	17	5	18	10	31	16	20	13	86	44	10	8
Third 3 months..	14	4	19	11	22	10	10	6	65	31	12	8
Fourth 3 months	15	4	16	7	21	11	6	3	58	25	3	15
First year	51	15	64	37	107	64	135	106	357	222	45	35
Second year	12	4	33	18	47	29	23	17	115	68	14	43
Third year	5	3	8	2	23	19	15	10	51	34	13	34
Fourth year	4	2	14	4	10	6	5	4	33	16	20	15
Fifth year	5	3	12	5	16	7	5	4	38	19	15	22
First 5 years....	77	27	131	66	203	125	183	141	594	359	107	149
Second 5 years..	3	1	19	9	28	13	8	4	58	27	106	68
Third 5 years..	7	5	22	19	17	12	3	2	49	38	87	45
Total 15 years	87	33	172	94	248	150	194	147	701	424	300	262

TABLE III—SENILE PSYCHOSES. FREQUENCY OF CERTAIN EVENTS IN THE HOSPITAL HISTORY OF PATIENTS DURING SPECIFIED PERIODS AFTER FIRST ADMISSION

Period	Recovered Total	Recovered Final	Discharges as Much improved Total	Much improved Final	Improved Total	Improved Final	Discharges, other conditions Total	other conditions Final	Discharges, all conditions Total	all conditions Final	Deaths	Readmissions
MALE—600 CASES												
First 3 months..	6	5	4	3	10	8	16	13	36	29	176	..
Second 3 months	2	..	6	5	6	5	6	3	20	13	64	2
Third 3 months.	1	1	2	1	9	7	5	3	17	12	44	4
Fourth 3 months	1	..	2	2	7	5	1	1	11	8	33	1
First year	10	6	14	11	32	25	28	20	54	62	317	7
Second year	1	1	3	2	4	4	..	..	8	7	72	5
Third year	..	..	4	3	2	..	..	..	6	3	33	6
Fourth year	..	..	1	..	3	2	1	1	5	3	22	4
Fifth year	1	1	..	..	..	..	..	..	1	1	20	3
First 5 years....	12	8	22	16	41	31	29	21	104	76	464	25
Second 5 years..	..	..	1	1	2	1	..	..	3	2	35	3
Third 5 years..	..	..	1	1	1	1	1	1	3	3	10	1
Total 15 years	12	8	24	18	44	33	30	22	110	81	509	29
FEMALE—600 CASES												
First 3 months..	1	1	..	..	6	2	12	8	19	11	123	3
Second 3 months	3	1	3	2	3	1	2	2	11	6	73	2
Third 3 months..	..	..	3	3	8	7	..	..	11	10	31	..
Fourth 3 months	1	..	1	1	8	5	1	1	11	7	24	2
First year	5	2	7	6	25	15	15	11	52	34	251	7
Second year	..	..	3	3	6	5	2	1	11	9	81	3
Third year	..	..	2	2	1	1	..	..	3	3	44	5
Fourth year	..	..	1	1	4	3	..	..	5	4	39	1
Fifth year	..	..	2	1	2	1	..	..	4	2	34	1
First 5 years ...	5	2	15	13	38	25	17	12	75	52	449	17
Second 5 years ..	..	..	1	..	..	..	1	1	2	1	66	6
Third 5 years..	..	..	..	..	..	..	..	..	..	..	15	1
Total 15 years	5	2	16	13	38	25	18	13	77	53	530	24
BOTH SEXES—1,200 CASES												
First 3 months..	7	6	4	3	16	10	28	21	55	40	299	3
Second 3 months	5	1	9	7	9	6	8	5	31	19	137	4
Third 3 months	1	1	5	4	17	14	5	3	28	22	75	4
Fourth 3 months	2	..	3	3	15	10	2	2	22	15	57	3
First year	15	8	21	17	57	40	43	31	136	96	568	14
Second year	1	1	6	5	10	9	2	1	19	16	153	8
Third year	..	..	6	5	3	1	..	..	9	6	77	11
Fourth year	..	..	2	1	7	5	1	1	10	7	61	5
Fifth year	1	1	2	1	2	1	..	..	5	3	54	4
First 5 years ..	17	10	37	29	79	56	46	33	179	128	913	42
Second 5 years..	..	..	2	1	2	1	1	1	5	3	101	9
Third 5 years..	..	..	1	1	1	1	1	1	3	3	25	2
Total 15 years	17	10	40	31	82	58	48	35	187	134	1039	53

TABLE IV—PSYCHOSES WITH CEREBRAL ARTERIOSCLEROSIS. FREQUENCY OF CERTAIN EVENTS IN THE HOSPITAL HISTORY OF PATIENTS DURING SPECIFIED PERIODS AFTER FIRST ADMISSION

Period	Recovered Total	Recovered Final	Discharges as Much improved Total	Much improved Final	Improved Total	Improved Final	Discharges, other conditions Total	other conditions Final	Discharges, all conditions Total	all conditions Final	Deaths	Readmissions
MALE—600 CASES												
First 3 months..	9	4	5	4	13	9	14	10	41	27	149	..
Second 3 months	7	5	8	4	8	3	5	3	28	15	58	2
Third 3 months..	8	4	15	11	10	8	4	4	37	27	41	4
Fourth 3 months	3	3	10	4	6	5	..	..	19	12	31	5
First year	27	16	38	23	37	25	23	17	125	81	279	11
Second year ..	2	1	10	6	6	1	4	2	22	10	63	9
Third year	6	3	5	4	2	1	..	..	13	8	32	16
Fourth year	2	1	1	1	2	2	..	..	5	4	24	3
Fifth year	..	..	1	..	3	2	..	..	4	2	9	2
First 5 years..	37	21	55	34	50	31	27	19	169	105	407	41
Second 5 years..	4	3	2	..	4	2	1	..	11	5	43	21
Third 5 years..	3	1	2	2	1	..	..	..	6	3	23	10
Total 15 years	44	25	59	36	55	33	28	19	186	113	473	72
FEMALE—600 CASES												
First 3 months..	7	3	3	2	8	8	12	7	30	20	125	2
Second 3 months	8	2	4	2	4	2	5	3	21	9	51	3
Third 3 months..	3	2	4	2	15	8	3	2	25	14	39	3
Fourth 3 months	7	1	2	2	7	3	..	..	16	6	29	6
First year	25	8	13	8	34	21	20	12	92	49	244	14
Second year ...	3	..	13	10	17	10	1	..	34	20	76	9
Third year	..	..	..	..	1	..	2	2	3	2	44	8
Fourth year	..	..	1	1	2	1	..	..	3	2	37	6
Fifth year	..	..	1	1	..	..	..	..	1	1	21	2
First 5 years..	28	8	28	20	54	32	23	14	133	74	422	39
Second 5 years..	5	1	4	3	3	2	2	2	14	8	49	20
Third 5 years..	1	..	..	..	2	2	..	..	3	2	20	7
Total 15 years	34	9	32	23	59	36	25	16	150	84	491	66
BOTH SEXES—1,200 CASES												
First 3 months..	16	7	8	6	21	17	26	17	71	47	274	2
Second 3 months	15	7	12	6	12	5	10	6	49	24	109	5
Third 3 months..	11	6	19	13	25	16	7	6	62	41	80	7
Fourth 3 months	10	4	12	6	13	8	..	..	35	18	60	11
First year	52	24	51	31	71	46	43	29	217	130	523	25
Second year ...	5	1	23	16	23	11	5	2	56	30	139	18
Third year	6	3	5	4	3	1	2	2	16	10	76	24
Fourth year ...	2	1	2	2	4	3	..	..	8	6	61	9
Fifth year	..	..	2	1	3	2	..	..	5	3	30	4
First 5 years..	65	29	83	54	104	63	50	33	302	179	829	80
Second 5 years..	9	4	6	3	7	4	3	2	25	13	92	41
Third 5 years ..	4	1	2	2	3	2	..	..	9	5	43	17
Total 15 years	78	34	91	59	114	69	53	35	336	197	964	138

TABLE V—ALCOHOLIC PSYCHOSES. FREQUENCY OF CERTAIN EVENTS IN HOSPITAL HISTORY OF PATIENTS DURING SPECIFIED PERIODS AFTER FIRST ADMISSION

Period	Recovered Total	Recovered Final	Discharges as Much improved Total	Much improved Final	Improved Total	Improved Final	Discharges, other conditions Total	other conditions Final	Discharges, all conditions Total	all conditions Final	Deaths	Readmissions
MALE—600 CASES												
First 3 months..	108	95	8	8	14	14	13	10	143	127	29	2
Second 3 months	90	76	5	3	9	9	..	..	104	88	5	3
Third 3 months.	63	58	..	..	9	9	1	1	73	68	5	4
Fourth 3 months	26	19	5	4	8	6	3	3	42	32	3	4
First year	287	248	18	15	40	38	17	14	362	315	42	13
Second year ...	30	22	10	8	11	10	2	2	53	42	9	16
Third year	6	4	9	7	7	5	2	1	24	17	6	11
Fourth year ...	9	9	2	2	3	2	1	..	15	13	7	10
Fifth year	5	4	3	3	1	1	..	..	9	8	11	3
First 5 years...	337	287	42	35	62	56	22	17	463	395	75	53
Second 5 years..	8	7	4	4	6	6	..	..	18	17	33	11
Third 5 years ..	7	4	2	2	..	..	..	..	9	6	16	7
Total 15 years	352	298	48	41	68	62	22	17	490	418	124	71
FEMALE—600 CASES												
First 3 months..	37	31	2	2	9	9	4	2	52	44	76	..
Second 3 months	53	46	7	4	6	3	1	1	67	54	12	4
Third 3 months..	47	39	10	7	11	10	2	2	70	58	5	3
Fourth 3 months	31	25	9	8	9	6	1	1	50	40	7	4
First year	168	141	28	21	35	28	8	6	239	196	100	11
Second year ...	39	34	18	16	16	12	1	1	74	63	7	14
Third year	20	14	6	4	8	7	1	1	35	26	8	10
Fourth year ...	4	2	3	3	8	6	..	..	15	11	9	11
Fifth year	6	6	4	3	4	4	..	..	14	13	9	6
First 5 years...	237	197	59	47	71	57	10	8	377	309	133	52
Second 5 years..	10	7	9	6	5	5	1	1	25	19	29	12
Third 5 years...	..	..	4	4	6	3	..	..	10	7	18	11
Total 15 years	247	204	72	57	82	65	11	9	412	335	180	75
BOTH SEXES—1,200 CASES												
First 3 months..	145	126	10	10	23	23	17	12	195	171	105	2
Second 3 months	143	122	12	7	15	12	1	1	171	142	17	7
Third 3 months..	110	97	10	7	20	19	3	3	143	126	10	7
Fourth 3 months	57	44	14	12	17	12	4	4	92	72	10	8
First year	455	389	46	36	75	66	25	20	601	511	142	24
Second year ...	69	56	28	24	27	22	3	3	127	105	16	30
Third year	26	18	15	11	15	12	3	2	59	43	14	21
Fourth year ..	13	11	5	5	11	8	1	..	30	24	16	21
Fifth year	11	10	7	6	5	5	..	..	23	21	20	9
First 5 years...	574	484	101	82	133	113	32	25	840	704	208	105
Second 5 years.	18	14	13	10	11	11	1	1	43	36	62	23
Third 5 years...	7	4	6	6	6	3	..	..	19	13	34	18
Total 15 years	599	502	120	98	150	127	33	26	902	753	304	146

TABLE VI—GENERAL PARALYSIS FREQUENCY OF CERTAIN EVENTS IN THE HOSPITAL HISTORY OF PATIENTS DURING SPECIFIED PERIODS AFTER FIRST ADMISSION

Period	Recovered Total	Recovered Final	Discharges as Much improved Total	Much improved Final	Improved Total	Improved Final	Discharges, other conditions Total	other conditions Final	Discharges, all conditions Total	all conditions Final	Deaths	Readmissions
MALE—600 CASES												
First 3 months	1	..	1	1	7	5	25	18	34	24	114	3
Second 3 months	1	..	5	5	7	2	9	4	22	11	66	2
Third 3 months	1	..	4	2	5	3	2	1	12	6	43	3
Fourth 3 months	1	..	4	3	5	4	4	3	14	10	33	4
First year	4	..	14	11	24	14	40	26	82	51	256	12
Second year	1	..	2	2	11	8	9	5	23	15	114	15
Third year	..	..	2	2	5	4	8	8	15	14	53	5
Fourth year	1	..	..	..	..	..	..	..	1	..	30	3
Fifth year	..	..	1	..	..	..	2	1	3	1	17	3
First 5 years	6	..	19	15	40	26	59	40	124	81	470	38
Second 5 years	..	..	2	2	4	2	..	..	6	4	14	4
Third 5 years	..	..	1	1	..	..	..	..	1	1	4	3
Total 15 years	6	..	22	18	44	28	59	40	131	86	488	45
FEMALE—600 CASES												
First 3 months	1	..	2	2	14	12	23	21	40	35	84	..
Second 3 months	..	..	4	2	12	8	4	2	20	12	55	4
Third 3 months	1	..	3	3	14	7	8	7	26	17	48	3
Fourth 3 months	..	..	3	2	14	11	4	3	21	16	24	8
First year	2	..	12	9	54	38	39	33	107	80	211	15
Second year	..	..	6	6	23	17	3	2	32	25	74	12
Third year	..	..	2	2	7	5	3	3	12	10	49	4
Fourth year	..	..	1	..	7	6	..	..	8	6	25	2
Fifth year	..	..	..	..	2	2	..	..	2	2	16	2
First 5 years	2	..	21	17	93	68	45	38	161	123	375	35
Second 5 years	2	1	2	1	..	..	1	1	5	3	20	4
Third 5 years	..	..	..	..	..	..	..	..	..	..	8	..
Total 15 years	4	1	23	18	93	68	46	39	166	126	403	39
BOTH SEXES—1,200 CASES												
First 3 months	2	..	3	3	21	17	48	39	74	59	198	3
Second 3 months	1	..	9	7	19	10	13	6	42	23	121	6
Third 3 months	2	..	7	5	19	10	10	8	38	23	91	6
Fourth 3 months	1	..	7	5	19	15	8	6	35	26	57	12
First year	6	..	26	20	78	52	79	59	189	131	467	27
Second year	1	..	8	8	34	25	12	7	55	40	188	27
Third year	..	..	4	4	12	9	11	11	27	24	102	9
Fourth year	1	..	1	..	7	6	..	..	9	6	55	5
Fifth year	..	..	1	..	2	2	2	1	5	3	33	5
First 5 years	8	..	40	32	133	94	104	78	285	204	845	73
Second 5 years	2	1	4	3	4	2	1	1	11	7	34	8
Third 5 years	..	..	1	1	..	..	..	..	1	1	12	3
Total 15 years	10	1	45	36	137	96	105	79	297	212	891	84

TABLE VII—ALL PSYCHOSES. FREQUENCY OF CERTAIN EVENTS IN THE HOSPITAL HISTORY OF PATIENTS DURING SPECIFIED PERIODS AFTER FIRST ADMISSION

Period	Recovered Total	Recovered Final	Discharges as Much improved Total	Much improved Final	Improved Total	Improved Final	Discharges, other conditions Total	other conditions Final	Discharges, all conditions Total	all conditions Final	Deaths	Readmissions
MALE—1,200 CASES												
First 3 months..	65	56	16	15	38	33	64	54	183	158	146	5
Second 3 months	73	56	16	14	19	14	17	8	125	92	43	5
Third 3 months.	59	39	7	2	18	14	8	5	92	60	34	9
Fourth 3 months	24	17	8	6	13	7	6	5	51	35	32	9
First Year	221	168	47	37	88	68	95	72	451	345	255	28
Second year ...	27	19	23	14	24	14	15	9	89	56	79	39
Third year	17	8	8	4	15	11	10	9	50	32	42	28
Fourth year ...	10	4	7	1	4	3	3	1	24	9	27	20
Fifth year	10	8	5	1	2	2	4	2	21	13	14	14
First 5 years....	285	207	90	57	133	98	127	93	635	455	417	129
Second 5 years..	21	7	6	3	17	9	9	7	53	26	69	57
Third 5 years...	12	7	7	4	5	3	2	2	26	16	25	22
Total 15 years	318	221	103	64	155	110	138	102	714	497	511	208
FEMALE—1,200 CASES												
First 3 months..	30	28	9	6	35	29	69	62	143	125	128	5
Second 3 months	49	31	5	3	29	19	14	10	97	63	44	3
Third 3 months..	47	34	10	6	27	19	6	4	90	63	27	5
Fourth 3 months	52	40	7	5	11	7	3	2	73	54	23	6
First year	178	133	31	20	102	74	92	78	403	305	222	19
Second year ...	39	26	18	14	26	23	10	7	93	70	50	32
Third year	18	12	9	7	9	8	8	7	44	34	35	18
Fourth year ...	9	5	10	5	8	3	3	1	30	14	29	13
Fifth year	4	..	2	1	8	6	1	1	15	8	30	11
First 5 years...	248	176	70	47	153	114	114	94	585	431	366	93
Second 5 years.	30	14	15	12	8	5	3	1	56	32	70	52
Third 5 years...	16	9	6	6	8	5	2	2	32	22	46	35
Total 15 years	294	199	91	65	169	124	119	97	673	485	482	180
BOTH SEXES—2,400 CASES												
First 3 months..	95	84	25	21	73	62	133	116	326	283	274	10
Second 3 months	122	87	21	17	48	33	31	18	222	155	87	8
Third 3 months.	106	73	17	8	45	33	14	9	182	123	61	14
Fourth 3 months	76	57	15	11	24	14	9	7	124	89	55	15
First year	399	301	78	57	190	142	187	150	854	650	477	47
Second year ...	66	45	41	28	50	37	25	16	182	126	129	71
Third year	35	20	17	11	24	19	18	16	94	66	77	46
Fourth year ...	19	9	17	6	12	6	6	2	54	23	56	33
Fifth year	14	8	7	2	10	8	5	3	36	21	44	25
First 5 years...	533	383	160	104	286	212	241	187	1220	886	783	222
Second 5 years..	51	21	21	15	25	14	12	8	109	58	139	109
Third 5 years...	28	16	13	10	13	8	4	4	58	38	71	57
Total 15 years	612	420	194	129	324	234	257	199	1387	982	993	388

TABLE VIII—GENERAL SUMMARY. FREQUENCY OF CERTAIN EVENTS IN SPECIFIED PERIODS OF THE HOSPITAL HISTORY OF PATIENTS BY DIAGNOSTIC GROUPS. BOTH SEXES

1,200 cases in each group except "all psychoses," which comprises 2,400

	Discharges, recovered		Discharges, much improved and improved		All discharges, all conditions			
	Total	Final	Total	Final	Total	Final	Deaths	Readmissions
First year:								
Manic-depressive	530	331	158	115	744	493	84	41
Dementia præcox	51	15	171	101	357	222	45	35
Senile	15	8	78	57	136	96	568	14
Arteriosclerotic	52	24	122	77	217	130	523	25
Alcoholic	455	389	121	102	601	511	142	24
General paralysis	6	...	103	72	189	131	467	27
All psychoses	399	301	268	199	854	650	477	47
Second year:								
Manic-depressive	127	76	48	32	184	114	17	67
Dementia præcox	12	4	80	47	115	68	14	43
Senile	1	1	16	14	19	16	153	8
Arteriosclerotic	5	1	46	27	56	30	139	18
Alcoholic	69	56	55	46	127	105	16	30
General paralysis	1	...	42	33	55	40	188	27
All psychoses	66	45	91	65	182	126	129	71
First 5 years:								
Manic-depressive	771	458	255	170	1098	685	136	221
Dementia præcox	77	27	334	191	594	359	107	149
Senile	17	10	116	85	179	128	913	42
Arteriosclerotic	65	29	187	117	302	179	829	80
Alcoholic	574	484	234	195	840	704	208	105
General paralysis	8	...	173	126	285	204	845	73
All psychoses	533	383	446	316	1220	886	783	222
Second 5 years:								
Manic-depressive	131	47	31	13	164	61	48	214
Dementia præcox	3	1	47	22	58	27	106	68
Senile	..	..	4	2	5	3	101	9
Arteriosclerotic	9	4	13	7	25	13	92	41
Alcoholic	18	14	24	21	43	36	62	23
General paralysis	2	1	8	5	11	7	34	8
All psychoses	51	21	46	29	109	58	139	109
Entire 15 years:								
Manic-depressive	981	550	311	193	1368	802	212	537
Dementia præcox	87	33	420	244	701	424	300	262
Senile	17	10	122	89	187	134	1039	53
Arteriosclerotic	78	34	205	128	336	197	964	138
Alcoholic	599	502	270	225	902	753	304	146
General paralysis	10	1	182	132	297	212	891	84
All psychoses	612	420	518	363	1387	982	993	388

SUPPLEMENTARY TABLE—A

PERCENTAGE DISTRIBUTION OF ALL DISCHARGES AND OF FINAL DISCHARGES ACCORDING TO CONDITION ON DISCHARGE, FOR CERTAIN SELECTED PERIODS OF HOSPITAL HISTORY, BOTH SEXES

	All discharges				Final discharges			
	Recovered	Much improved	Improved	Others	Recovered	Much improved	Improved	Others
Manic-depressive:								
First year	71.3	8.6	12.7	7.4	67.1	8.6	14.9	9.4
First 5 years	70.2	10.5	12.8	6.5	66.9	10.0	15.0	8.2
15 years	71.7	11.4	11.4	5.5	68.6	10.4	13.8	7.2
Dementia præcox:								
First year	14.3	17.9	30.0	37.8	6.8	16.7	28.8	47.7
First 5 years	13.0	22.0	34.2	30.8	7.5	18.4	34.8	39.3
15 years	12.4	24.5	35.4	27.7	7.8	22.2	35.4	34.6
Senile:								
First year	11.0	15.4	41.9	31.6	8.3*	17.7*	41.7*	32.3*
First 5 years	9.5	20.7	44.1	25.7	7.8	22.7	43.7	25.8
15 years	9.1	21.4	43.8	25.7	7.5	23.1	43.3	26.1
Arteriosclerotic:								
First year	24.0	23.5	32.7	19.8	18.5	23.8	35.4	22.3
First 5 years	21.5	27.5	34.4	16.6	16.2	30.1	35.2	18.5
15 years	23.2	27.1	33.9	15.8	17.3	30.0	35.0	17.8
Alcoholic:								
First year	75.6	7.7	12.5	4.2	76.0	7.1	13.0	3.9
First 5 years	68.3	12.1	15.9	3.8	68.7	11.7	16.1	3.5
15 years	66.3	13.3	16.7	3.7	66.6	13.0	16.9	3.6
General paralysis:								
First year	3.2	13.3	41.5	42.0	..	15.3	39.7	45.0
First 5 years	2.8	13.7	46.8	36.6	..	15.7	46.1	38.2
15 years	3.4	14.9	46.3	35.4	0.5	17.0	45.3	37.2
All psychoses:								
First year	46.6	9.2	22.3	21.9	44.5	9.1	22.6	23.8
First 5 years	43.6	13.1	23.5	19.7	41.8	12.1	24.6	21.5
15 years	44.1	14.0	23.4	18.5	41.5	13.5	24.4	20.6

* Base under 100.

SUPPLEMENTARY TABLE—B

PERCENTAGE OF FINAL DISCHARGES AMONG ALL DISCHARGES FOR EACH SPECIFIED CONDITION ON DISCHARGE, DURING THE FIRST YEAR AND THE FIRST FIVE YEARS AFTER FIRST ADMISSION, BY DIAGNOSTIC GROUPS

Male—600 cases in each group except "all psychoses," which comprises 1,200.

	Recovered		Much improved		Improved		Other conditions		All conditions	
	Total	Per cent Final	Total	Per cent Final	Total	Per cent Final	Total	Per cent Final	Total	Per cent Final
Manic-depressive:										
1 year	281	62.9	36	69.4	54	77.8	23	82.5	394	66.7
5 years	400	59.8	61	59.0	82	73.2	31	74.1	574	62.4
Dementia præcox:										
1 year	32	31.2	44	59.1	53	58.5	84	82.1	213	63.8
5 years	46	34.8	84	48.8	106	57.5	110	80.9	346	59.8
Senile:										
1 year	10	60.0	14	71.4	32	78.1	28	71.4	84	73.8
5 years	12	66.7	22	72.7	41	75.6	29	72.4	104	73.1

SUPPLEMENTARY TABLE—B—(Continued)

	Recovered		Much improved		Improved		Other conditions		All conditions	
	Total	Per cent Final	Total	Per cent Final	Total	Per cent Final	Total	Per cent Final	Total	Per cent Final
Arteriosclerotic:										
1 year	27	59.3	38	60.5	37	67.6	23	73.9	125	64.8
5 years	37	56.7	55	61.9	50	62.0	27	70.4	169	62.1
Alcoholic:										
1 year	287	86.3	18	83.3	40	95.0	17	82.3	362	87.1
5 years	337	85.1	42	83.3	62	90.4	22	77.2	463	85.3
General paralysis:										
1 year	4	...	14	78.6	24	87.5	40	65.0	82	62.2
5 years	6	...	19	78.9	40	65.0	59	67.8	124	65.3
All psychoses:										
1 year	221	76.0	47	78.7	88	77.3	95	75.8	451	76.5
5 years	285	72.6	90	63.3	133	73.7	127	73.2	635	71.7
Female—600 cases in each group except "all psychoses," which comprises 1,200										
Manic-depressive:										
1 year	249	61.8	28	60.7	40	77.5	33	84.8	350	65.7
5 years	371	59.0	54	59.3	58	72.4	41	82.9	524	62.4
Dementia præcox:										
1 year	19	26.3	20	55.0	54	61.1	51	72.6	144	59.7
5 years	31	35.5	47	53.2	97	66.0	73	71.2	248	61.3
Senile:										
1 year	5	40.0	7	85.7	25	60.0	15	73.3	52	65.4
5 years	5	40.0	15	86.5	38	65.8	17	70.6	75	69.3
Arteriosclerotic:										
1 year	25	32.0	13	61.5	34	61.7	20	60.0	92	53.3
5 years	28	28.6	28	71.4	54	59.3	23	60.9	133	55.7
Alcoholic:										
1 year	168	83.9	28	75.0	35	80.0	8	75.0	239	82.0
5 years	237	83.1	59	79.6	71	80.3	10	80.0	377	82.0
General paralysis:										
1 year	2	...	12	75.0	54	70.4	39	84.6	107	74.7
5 years	2	...	21	80.9	93	73.1	45	84.5	161	76.4
All psychoses:										
1 year	177	75.1	31	64.5	102	72.5	92	84.8	403	75.7
5 years	248	70.9	70	67.1	153	74.5	114	82.4	585	73.7
Both sexes—1,200 cases in each group except "all psychoses," which comprises 2,400										
Manic-depressive:										
1 year	530	62.5	64	65.6	94	77.7	56	83.9	744	66.3
5 years	771	59.4	115	59.1	140	72.9	72	79.2	1098	62.4
Dementia præcox:										
1 year	51	29.4	64	57.8	107	59.8	135	78.5	357	62.2
5 years	77	35.0	131	50.4	203	61.5	183	77.0	594	60.5
Senile:										
1 year	15	53.3	21	80.8	57	70.2	43	72.1	136	70.6
5 years	17	58.8	37	78.4	79	70.9	46	71.7	179	71.5
Arteriosclerotic:										
1 year	52	46.1	51	60.7	71	64.8	43	67.4	217	59.9
5 years	65	44.6	83	65.1	104	60.6	50	66.0	302	59.3
Alcoholic:										
1 year	455	85.5	46	78.3	75	88.0	25	80.0	601	85.1
5 years	574	84.3	101	81.2	133	84.9	32	78.1	840	83.8
General paralysis:										
1 year	6	...	26	76.9	78	66.7	79	74.6	189	69.3
5 years	8	...	40	80.0	133	70.7	104	75.0	285	71.5
All psychoses:										
1 year	399	75.5	78	73.0	190	74.7	187	80.2	854	76.1
5 years	533	71.9	160	65.0	286	74.1	241	77.6	1220	72.6

There are, in the 15 years, practically as many discharges among manic-depressives as there are in "all psychoses" with double the number of "original" or first admissions. Alcoholic and dementia præcox first admissions have the next largest number of discharges. Seniles have the smallest number, general paralysis the next smallest. Manics have the largest number in each of the three quinquenniums, except that the number of discharges in the first five years is larger in "all psychoses" than in the manic-depressive group. Discharges are more numerous among manic-depressives in the first three months and the first year than in any other group except "all psychoses." Alcoholics and dementia præcox come next, and in the first five years follow manic-depressives in this respect. In the manic-depressive group, 744 out of the 1,368 discharges in 15 years occur in the first year; in dementia præcox, 357 out of 701; senile, 136 out of 187; arteriosclerotic, 217 out of 336; alcoholic, 601 out of 902; general paralysis, 189 out of 297; "all psychoses," 854 out of 1,387.

Discharges are more numerous among males than females in the first three months, the first year, and first five years, and in the whole 15 years in all groups except general paralysis, where the contrary is true. The difference between the sexes is most striking in dementia præcox. There is no notable difference between the sexes in the second and third quinquenniums, and in most groups the numbers involved are very small in these periods.

Discharges are more likely than not to be final, the discharges so designated in our tables exceeding the non-final discharges in the first three months, the first year, the first five years, and the whole 15 years, for every group, and for each sex and both sexes of each group. But it is notable that in manic-depressives, dementia præcox and arteriosclerosis, the number of non-finals for both sexes in 15 years is more than half the number of finals, while in "all psychoses" the number of non-finals is considerably more than a third of the number of final discharges. In the 15 years, 59 per cent of the total discharges in the manic-depressive group are final; in dementia præcox, 60 per cent; senile, 72 per cent; arteriosclerosis, 59 per cent; alcoholic, 83 per cent; general paralysis, 71 per cent; "all psychoses," 71 per cent. The percentages for the first year and the first five years are practically the same as for the whole 15

in most groups; they are somewhat higher in manic-depressives and "all psychoses," particularly for the first year.

There are years, after the first, when non-final discharges outnumber the final, for either or both sexes, in manic-depressive, dementia præcox, and "all psychoses." In manic-depressives and dementia præcox, non-final discharges outnumber finals in both the second and the third quinquennium; these groups, with "all psychoses," in comparison with the other groups have high proportions of their total non-final discharges occurring in the second quinquennium. We are not stressing the third five years, in connection with finality or non-finality of discharge, because of the closer approach to the end of observation; and indeed, it is to be borne in mind that final or non-final totals for the 15 years, and proportions of these totals, are affected in similar manner. But the very small number of all discharges, inclusive of both final or non-final, in the second and third quinquenniums, is to be noted in the senile, arteriosclerotic, alcoholic and general paralysis groups; while in the other groups, the numbers are by no means large, either absolutely, or relatively to the number in the first five years.

Though the non-final discharges in the first year and the first five years exceed greatly the non-final discharges of succeeding comparable periods, their distribution through the quarters of the first year seems to follow no general rule. However, as they are much more likely to occur in the first year than in any succeeding year, in all groups, it is not surprising that in most groups, for both sexes, the second year from first admission is the big year for readmissions, though they loom large in the first and third, and with alcoholics in the fourth. The first year has the highest percentage (based on the total in 15 years) in senile and arteriosclerotic cases; the first and second are equal in general paralysis, with females as compared with males showing a markedly high percentage in the first year.

Senile, alcoholic and general paralysis, with small numbers of readmissions, have high percentages thereof occurring in the first quinquennium; manic-depressives, with the largest number of readmissions, have the smallest proportion occurring in this period, while dementia præcox with the next largest number of readmissions has the smallest proportion in the first five years. "All psy-

choses," with a larger number of readmissions than dementia præcox, has about the same proportion in this period as dementia præcox and arteriosclerotic (the latter having a relatively small number of readmissions). A very small proportion of total readmissions among the general paralysis cases occurs after the first five years, in the second and third quinquenniums; but the dementia præcox, "all psychoses," arteriosclerotic and manic-depressive groups, in that order, show from one-quarter to two-fifths of their total readmissions as occurring in the second five years. Manic-depressives have the largest proportion of readmissions taking place in the second five years and in the third five years, and accordingly have the most even distribution of readmissions as among the three quinquenniums, dementia præcox ranking next, followed by "all psychoses."

Total readmissions are most numerous among the six differentiated groups in the following order: Manic-depressive psychoses, dementia præcox, alcoholic psychoses, psychoses with cerebral arteriosclerosis, general paralysis, and senile psychoses. Cognizance, of course, is to be taken of the fact that these groups at the beginning of observation are equal in respect of the number of first admissions, which are equally divided also between the sexes of each group. Male readmissions outnumber female readmissions except in the alcoholic group, where the difference is slight and the total number small. This same relationship obtains in our "all psychoses" group. The numerical differences between the sexes in the matter of readmissions, and the relation (in percentages) of readmissions to first admissions, may be shown for the various groups as follows:

NUMBER OF READMISSIONS AND PER CENT OF FIRST ADMISSIONS

	Male		Female		Both sexes	
	Total number	Per cent	Total number	Per cent	Total number	Per cent
Manic-depressive	278	46.3	259	43.2	537	44.8
Dementia præcox	153	25.5	109	18.2	262	21.8
Senile	29	4.8	24	4.0	53	4.4
Arteriosclerotic	72	12.0	66	11.0	138	11.5
Alcoholic	71	11.8	75	12.5	146	12.2
General paralysis	45	7.5	39	6.5	84	7.0
"All psychoses"	208	16.5	180	15.0	388	16.1

The foregoing figures, of course, are affected by the relative number and proportion of deaths (whether in or out of the civil

State hospitals) among the different diagnostic groups. Differences between the groups are partly due to sex differences in number of deaths. As to deaths in hospital, females exceed males in all groups except general paralysis and "all psychoses." In the latter group, discharges from hospital are more numerous among the males than among the females; and so, less markedly, are final discharges. However, the percentage of final discharges among total discharges is slightly higher for the females than for the males, while the ratio of readmissions to total discharges is slightly higher for the males than the females.

Males show a tendency to an earlier occurrence of readmissions than do females in dementia præcox, alcoholic, senile and "all psychoses," so far as comparison of the quinquenniums is concerned. The tendency to earlier non-final discharge is likewise seen in these groups. Male readmissions show larger percentages of total readmissions than female, in the first and second years and in the first quinquennium, in alcoholic, dementia præcox, "all psychoses," but among arteriosclerotics the order of the sexes is reversed. In the senile group, females exceed males in the first year; males exceed females in the second year and the first five years; the same in general paralysis. In all groups but manic-depressive, females exceed males in the second quinquennium. Note in manic-depressives the remarkable evenness of the sexes in the individual years and the three quinquennial periods; also the closeness of the percentages of the first two quinquenniums for each sex and for both sexes.

Comparison of readmissions with discharges may also be made. The following figures relate to the cases of our yearly-progress study, and cover the entire 15-year period:

DISCHARGES AND READMISSIONS DURING FIFTEEN YEARS AFTER FIRST ADMISSION

	Discharges			Readmissions		
	Male	Female	Both	Male	Female	Both
Manic-depressive	709	659	1368	278	259	537
Dementia præcox	402	299	701	153	109	262
Senile	110	77	187	29	24	53
Arteriosclerotic	186	150	336	72	66	138
Alcoholic	490	412	902	71	75	146
General paralysis	131	166	297	45	39	84
"All psychoses"	714	673	1387	208	180	388

One notices that the discharges among manic-depressives exceed in number the 1,200 first admissions forming the original group,

and that the readmissions are also numerous. The alcoholic group, with a large number of discharges, has a small number of readmissions relatively to the number of discharges. The relation of readmissions to discharges, in percentages, is as follows for the several groups: Manic-depressives, 39.3; dementia præcox, 37.4; senile, 28.3; arteriosclerotic, 41.1; alcoholic, 16.2; general paralysis, 28.3; "all psychoses," 28.0.[10] These percentages, it is noteworthy, show no correspondence with the percentages indicative of the relation between readmissions and first admissions. Naturally they agree pretty closely with what has been shown as to final and non-final discharges, though it has to be remembered that non-final discharges mean discharges not followed by a readmission; the discrepancies being due to the fact that non-final discharges mean discharges followed by a readmission on or before June 30, 1928, whereas readmissions as recorded in the tables mean readmissions up to the end of 15 years after first admission. Male discharges exceed female discharges in all groups but one (general paralysis), male readmissions in all groups except the alcoholic, while in "all psychoses" the percentage expressing the relation of readmissions to discharges is 29.1 for males and 26.7 for females, suggesting as before noted the possibly greater tendency of males toward readmission.

Our principal tables show condition on discharge—the number of patients designated on the hospital records as "recovered," "much improved," or "improved," at time of discharge. "Other conditions" in the tables includes patients discharged as "unimproved," "without psychosis," and those discharged for deportation. Supplementary Table "A" gives, for both sexes of each diagnosis group, the percentage of total discharges in certain periods that bore the designation "recovered," "much improved," etc.; also the percentage of final discharges similarly recorded. This table may be read in the following manner: 46.1 per cent of the manic-depressive discharges in the first three months of hospital history were discharges as "recovered;" 42.9 per cent of the manic-depressive final discharges in this period (discharges not followed by a later admission) were discharges as "recovered." The table is submitted without commentary at this point.

10. In the arteriosclerotic and female alcoholic groups, our history is not complete for the whole original number of first admissions for the whole 15 years, though this would not greatly affect the percentages given.

The principal tables show, in absolute numbers, an excess of "final" over "recovered" discharges, except in the manic-depressive group. While assuredly we do not claim for the "final" discharges, as previously defined, that they constitute a true index of permanent recovery, they have some value and significance from this standpoint—the more so, if we consider only the final discharges among the discharges with a favorable condition (namely, as "recovered," "much improved," and "improved"), excluding the category of "other conditions." On the other hand, as we shall see, discharges as "recovered" carry but a limited likelihood of non-return, if we may thus express it, to the hospital system; that is, a large proportion of these discharges are followed, we find, by readmission sooner or later to one or another of the civil State hospitals of New York. In our tables, it should be emphasized, "final discharges" and "discharges as recovered" are two entirely separate categories; and though certain individuals may be counted under both heads, some counted under one may not be counted under the other. They are not synonymous designations. For quick comparison of the numbers (of discharges, not of patients) involved in these categories, in the different diagnostic groups, for both sexes combined, during the entire 15 years, the following brief compilation is submitted:

COMPARISON OF TOTAL DISCHARGES, FINAL DISCHARGES, AND DISCHARGES AS RECOVERED DURING FIFTEEN YEARS AFTER FIRST ADMISSION

	total discharges	Final all conditions	Final favorable conditions	Discharges as recovered
Manic-depressive	1368	802	743	981
Dementia præcox	701	424	277	87
Senile	187	134	99	17
Arteriosclerotic	336	197	162	78
Alcoholic	902	753	727	599
General paralysis	297	212	133	10
"All psychoses"	1387	982	783	612

Obviously a "recovery rate" reckoned on the basis of final discharge (in relation either to first admissions or to total discharges) would be higher in all groups except the manic-depressive group that one reckoned on the basis of "recoveries" as recorded on the hospital books. Attention is again called, however, to the fact that discharges of all descriptions throughout our tables refer to events rather than to individuals. In the present paper we are not attempt-

ing to calculate either recovery or readmission rates, largely because of this lack of separation between number of discharges and number of different persons discharged and between number of readmissions and number of different persons readmitted. Our purpose is rather to show the movement of hospital population, insofar as it concerns certain groups of first admissions, during 15 years. This movement is exhibited in terms of the occurrence of specified events of hospital history; and comparison of kinds or categories of events, with regard to their frequency of occurrence, has a bearing on the question of rates, though it does not yield the rates which we shall attempt to calculate on the basis of more adequate data. The value of such comparison is both suggestive and cautionary.

Most assuredly, we are not advocating that "final discharges" should be substituted for "discharges as recovered" in determining recovery rates, but our data help to emphasize the importance, in this connection, of the post-discharge history. In following definite groups of patients through a series of "hospital years," we have shown the prognostic unreliability of "condition on discharge." But this is not intended as a criticism of the hospitals on the score of accuracy in recording the condition at the time of leaving hospital. While the recorded condition must be largely a matter of opinion, and as such subject to some degree of error, it is not viewed primarily, if at all, as a question of the probable return or non-return of patients to the hospital for treatment. In manic-depressive cases, for example, recovery from the attack which last brought the patient to the hospital is, in practice, we believe, considered sufficient ground for recording the condition as "recovered." On the other hand, there is medical doubt as to the justification—generally as well as in particular cases—of the term "recovery" in senile, and to a less extent in arteriosclerotic cases, because of the nature of these age-process psychoses. Its use in the hospital system is now less frequent than formerly, in such cases.

During the 15 years of group history, in "all psychoses," out of the total number of discharges as recovered, nearly a third were followed by readmission. In the manic-depressive group, somewhat more than half of the "recoveries" were final. Fewer than

half were final in dementia præcox and the arteriosclerotic group, though the total number of "recoveries" in each group was small. In the alcoholic group, five-sixths of the discharges as "recovered" were final. Only one of the ten "recoveries" from general paralysis was final. This group might have made a better showing on recoveries or final discharges, if malarial treatment had been instituted 15 or 20 years ago.

The accompanying supplementary table ("B") shows, according to recorded condition on discharge, the number of discharges and percentage of discharges not followed by readmission. In this table we are presenting figures and percentages only for the first year and the first five years, in order to minimize the influence of a closer approach to the final check of the records as of June 30, 1928. The absolute numbers shown under certain headings in this supplementary table are too small in several groups, notably senile and general paralysis, to render the percentages entirely dependable, and allowance must be made accordingly. In general, however, the table suggests that a discharge under the designation "much improved" or even "improved" is as propitious for the patient as a recorded "recovery." Moreover, as among the several groups, there is much more closeness of correspondence in the percentages for final discharges under the headings "much improved" or "improved" than there is under the heading "recovered." The highest percentages of finality are found under the "other conditions" heading, as this includes discharges "without psychosis" and discharges for deportation.

The percentages of final discharges among all discharges in the periods shown by the table are based on sufficiently large numbers to be fairly reliable. But a truer representation of the matter at issue may perhaps be made if we exclude the "other conditions," and base our percentages of finality on the discharges with a favorable prognosis, if we may so speak of it. We have seen that discharges as "much improved" or "improved" are as favorable, from the standpoint of finality, as are "recoveries." In the following brief table we are combining the discharges as "recovered," "much improved" and "improved," and showing the percentage of those that were final. This percentage runs slightly lower than that for final discharges among all discharges.

PERCENTAGE OF FINAL DISCHARGES AMONG THOSE DISCHARGED AS "RECOVERED," "MUCH IMPROVED" AND "IMPROVED" COMBINED

	Number of discharges						Percentage final		
	Male		Female		Both				
	Total	Final	Total	Final	Total	Final	Male	Female	Both
Manic-depressive:									
1 year	371	244	317	202	688	446	65.7	63.7	64.8
5 years	543	335	483	293	1026	628	61.7	60.7	61.8
Dementia præcox:									
1 year	129	67	93	49	222	116	51.9	52.7	52.3
5 years	236	118	175	100	411	218	50.0	57.1	53.0
Senile:									
1 year	56	42	37	23	93	65	75.0	62.1	69.9
5 years	75	55	58	40	133	95	73.3	69.0	71.4
Arteriosclerotic:									
1 year	102	64	72	37	174	101	62.7	51.4	58.1
5 years	142	86	110	60	252	146	60.5	54.5	57.9
Alcoholic:									
1 year	345	301	231	190	576	491	87.3	82.2	85.3
5 years	441	378	367	301	808	679	85.7	82.1	84.0
General paralysis:									
1 year	42	25	68	47	110	72	59.5	69.2	65.5
5 years	65	41	116	85	181	126	63.1	73.3	69.6
All psychoses:									
1 year	356	273	311	227	667	500	76.7	73.0	75.0
5 years	508	362	471	337	979	699	71.3	71.6	71.4

By reference to Supplementary Table "A," it will be seen how the above finality percentages agree, or rather disagree, with the proportion of discharges as "recovered" among all discharges for the one-year and five-year periods. For both sexes the percentage of finality is lower than the percentage of recovery in the manic-depressive group, but much higher in all other groups, the differences being very wide and variable. In other words, there is no correspondence between the percentages for "finality" and the percentages for "recovery." The conclusion of this whole discussion of "recovery" and "finality" would seem to be that, whatever criticism may be made of the category of "final discharges" as an index of recovery, it expresses, incompletely, a factual element that needs to be considered in the construction of a "real recovery rate" for mental patients, if by "real recovery" we mean the eventual outcome of the case; and furthermore, it is a category of some interest and significance on its own account.

GENERAL SUMMARY

In this and a preceding article tables have been presented showing what happens to mental patients after their first admission to the civil State hospitals of New York. The data relate to the his-

tory of seven groups, each traced through an observation period of 15 years by reference to the central records of the hospital system. Six of these groups were composed of 600 men and 600 women in each of six different diagnostic classes, while the seventh was made up of 1,200 men and 1,200 women representative of all diagnostic classes. Note must be taken of the numerical equality of the six differentiated groups in respect of first admissions; also of the equal distribution between the sexes in each of the seven groups studied.

The tables of the first article showed what had happened in each of the groups up to the end of given periods after first admission—how many patients belonging to each group had died, how many had been discharged without a subsequent admission, how many had been eliminated by death or discharge from the hospital system, and how many at the expiration of these given periods were under hospital care. The principal tables in this article exhibit for each of the seven groups the number of deaths, discharges, final discharges and readmissions occurring in each of the various periods into which the 15-year history is divided.

The records of the six differentiated groups vary greatly, while the history of the "all psychoses" group shows significant differences as among the several classes of events and the several divisions of the observation period. As the "all psychoses" group represents the general run of patients admitted to the civil State hospitals, certain facts regarding its history may be cited here for purposes of summary.

Three hundred and sixty-one of the 999 deaths in 15 years occurred in the first six months of hospital history, 477 in the first year.

Five hundred and forty-eight of the 1,387 discharges occurred in the first six months, 854 in the first year.

Four hundred and thirty-eight of the 982 final discharges occurred in the first six months, 650 in the first year.

Seven hundred and ninety-nine of the 1,975 final eliminations from hospital by death or discharge occurred in the first six months, 1,127 in the first year.

"Recovered" is the recorded condition on discharge in 44.1 per cent of the discharges occurring in 15 years; "much improved" or

"improved" in 37.4 per cent. Of the total discharges in 15 years, 71 per cent are final.

Of discharges as "recovered" 69 per cent were final; of discharges as "recovered," "much improved," or "improved" 69 per cent, again, were final.

Males exceed females in number of deaths, number of discharges, and number of final discharges, but females exceed males in proportion of final discharges among total discharges. Males slightly exceed females in number of readmissions, and in the ratio of readmissions to first admissions and the ratio of readmissions to total discharges.

The facts brought out in this yearly-progress study emphasize the clinical (and administrative) importance of the early periods of hospital life—the first few months and the first year.

The need of giving intensive study, care and treatment to mental patients immediately after first admission, has often been stressed, as in the recommendations made by the Committee on Medical Service in its report of 1924:

"A reception service or reception hospital should be an active treatment center where the most difficult and responsible medical work of the institution is concentrated. It fails in its chief function if new patients cannot be kept a reasonable length of time for an examination and diagnosis and determination of a plan of treatment for all cases received, as well as for the intensive treatment of certain types." [11]

The clinician will recognize different physical and psychical factors characterizing the different groups and indicating what can be done in each to speed and assure recovery or successful outcome by means of early intensive attention to the care and treatment of cases; but there is probably no group the prospects of which are not materially advanced by such prompt, thorough and individualized attention at the outset of hospital life. Perhaps it is also true that continued intensiveness of care and treatment of "continued treatment" cases is quite as desirable, if not so efficacious.

Our data, taken at face value, show that the early periods of hospital life are marked by the greatest likelihood of a successful outcome. In this connection we must bear in mind that the results of the study reflect the results of hospital treatment as it was during

11. "The Medical Service of the New York State Hospitals," by George H. Kirby, M. D., William L. Russell, M. D., and John R. Ross, M. D., members of a Committee on Medical Service appointed by the State Hospital Commission. Reprinted from the STATE HOSPITAL QUARTERLY, November, 1924.

the observation period and not as it might be ideally. We cannot say to what extent the findings are a testimony to the effectiveness of early intensive care and treatment, or to what extent they might have been affected by more intensive early care and treatment. Nor can we say that the early periods of hospital life are the only periods in which patients need such attention. The overcrowding and understaffing of the hospitals militates against the best medical and psychiatric results, certainly in the earlier and probably in the later periods of hospital life.

The summary table (Table VIII, page 660) recapitulates, for both sexes together, the leading facts shown in the seven principal tables of this article.

SUGGESTIONS FOR A PRACTICAL PROGRAM OF PREVENTION FOR NEW YORK STATE, EXCLUSIVE OF NEW YORK CITY

BY V. C. BRANHAM, M. D.*

DEPUTY COMMISSIONER, DEPARTMENT OF CORRECTION, STATE OF NEW YORK

The increasing admission rate to State hospitals for the care of the mentally ill, the increase in the incidence of crime and the spread of juvenile delinquency have led workers in the field of medical and social welfare to consider carefully the possibilities of programs of prevention. Thus far no comprehensive plan, exclusive of New York City, has been offered for preventive work in mental hygiene. The matter was carefully considered by the Executive Committee of the New York State Committee on Mental Hygiene and after considerable discussion the following program was adopted. The immediate objectives realizable within a period of two or three years were outlined as well as the broader and more general aspects of prevention which could be approached over a more extended period of ten to twenty years. In offering this program of prevention the committee has considered it to be a working plan, a number of features of which are already in the process of realization.

A. Projects Tentatively Realizable within the Next Decade

I. CLINIC SERVICE

1. *Large Cities.*

The Psychopathic Hospital and the Psychiatric Institute and Hospital just established in Syracuse and New York City, respectively, will undoubtedly demonstrate in the course of time the feasibility of the State's providing training and intensive treatment services for large cities. In general it may be said that the large cities should be prepared to solve their problems of prevention and to arrange for clinic facilities as rapidly as the local situation warrants. In the event that such efforts prove to be inadequate the State with its extensive mental hygiene facilities may be in a position to give limited advice and help. In the cities of Buffalo, Rochester and Albany there is every indication that the clinic program can more profitably develop around the medical school and the hospital service than through the establishment of insti-

* Formerly medical director, New York State Committee on Mental Hygiene.

tutes which would encroach somewhat on plans already under way. These centers likewise should make their clinic service available to surrounding counties, especially for cases demanding extended psychiatric treatment and specialized laboratory and medical technique. The present arrangement, with institutes at Syracuse and New York City, makes available within reasonable limits facilities for teaching, training and research for the entire State. Through the establishment of clinics for children and adults at the institutes, centers will be provided for training the medical and social service personnel in clinic procedure for subsequent service in the clinics maintained by the State Department of Mental Hygiene and for adequate treatment of cases in the community. The institutes may also profitably extend training at nominal fees to physicians and social workers not in the service of the State, thereby increasing the possibility of securing trained personnel for the Department of Mental Hygiene.

2. *Medium-sized Cities.*

The medium-sized cities such as Schenectady, Utica, Auburn, Elmira, Binghamton and Poughkeepsie, require more assistance both financially and in a consultation capacity from the State than is necessary for the large cities. The establishment by the State Department of a well-staffed child guidance clinic in several of these cities as demonstration units for a limited period would do much towards developing community interest in the field of mental hygiene. The auspices under which such clinics ultimately develop would depend largely upon the relative importance of local hospitals, council of social agencies, schools, etc. Clinic service, of course, would be rendered to all types of agencies devoted to child welfare not only within the city itself but to rural sections within a moderate radius.

3. *Rural Sections.*

An analysis of the existing facilities in rural sections of the State indicates that the following combination of services would operate to good advantage.*

(a) The use of well developed clinics in large cities by the rural sections of contiguous counties.

(b) Further extension of facilities of the child guidance clinics

* Can Rural Districts Carry Out an Effective Mental Hygiene Program? V. C. Branham, PSYCHIATRIC QUARTERLY, April, 1930.

maintained by the State Department of Mental Hygiene so as to provide additional psychiatric personnel and psychiatric social service sufficient to insure the attendance of at least one worker for each clinic session. Ultimate follow-up objectives should lead to the districting of the State for the organization of local resources by psychiatric social workers under the supervision of the director of social work.

(c) Further extension of the State hospital clinics especially in reaching community types of adults. In this connection the voluntary admissions to the State hospitals can be freely utilized for adult types requiring more prolonged supervision than clinics can offer. In localities where clinic attendance is heavy, the parole and community cases can advantageously be seen at separate clinic sessions. The assignment to each hospital of the district surrounding it as a mental health unit to be served through extra and intramural clinics and through lecture and consultation facilities will undoubtedly do much towards raising the standards of mental health throughout the community. In order to secure the extension of extramural work of the State hospitals it is recommended that the staff of each State hospital be increased by the addition of at least one physician whose time will be devoted entirely to extramural work. His services will be required not only in developing the clinic facilities for the care and treatment of community types of cases but he can also materially further the interest of other staff members in the enlargement of their own conception of mental hygiene activities, especially as relates to the contact of the hospital with the community clinics.

(d) A study of existing local welfare resources indicates that the county agents for dependent children are best fitted by training and by the scope of the work for which they are employed to be trained for follow-up technique. It is recommended that these agents, as well as other welfare workers sufficiently interested, be offered special courses in the psychiatric institutes and in several of the State hospitals specially selected for the purpose. By this procedure a better grade of follow-up can be done on cases which the workers refer to clinics, and a deeper understanding of the mental hygiene aspects of their own welfare work can be brought about.

(e) The director of social work of the State Department of Mental Hygiene can standardize and develop the activities of the social service departments of the various State hospitals in such a manner as to aid materially in the efforts of the field agents and psychiatric social workers attached to clinics. This cooperation can best be effected through more adequate supervision of cases paroled from State hospitals and schools for the feebleminded than is now possible, and through the procedure of making available to the clinic personnel such organization of local resources as the social service departments of the hospitals find necessary for their own activities. The school for psychiatric social workers as outlined in the foregoing section on county agents for dependent children should be utilized by the social service departments. Annual meetings, probably coincident with those held by the clinician, should be conducted.

II. MENTAL HYGIENE COMMITTEES*

The establishment of mental hygiene committees in each county throughout the State is desirable. The personnel of such mental hygiene committees should be composed of local citizens interested in the field of mental hygiene and obviously should be non-partisan and non-sectarian, and should represent all parts of and all interests in the county such as the home, schools, institutions, courts, health and welfare.

The general activities of county mental hygiene committees would include educational and publicity work throughout the county, assistance in securing necessary legislation, and the promotion of local mental hygiene activities to meet local needs.

More specifically the work of the county committees would include organizing lecture courses for parents, teachers, nurses and the public; bringing about the establishment of mental clinics for schools, courts and welfare agencies; promoting the establishment of special classes for atypical children wherever necessary.

These and similar activities can be carried out in each county through affiliation with the State Mental Hygiene Committee and through close cooperation with the work of the State Department

* The material in this section has been prepared from "A Program for County Mental Hygiene Committees," by Katharine G. Ecob, executive secretary, New York State Committee on Mental Hygiene.

of Mental Hygiene. This procedure is essential where important legislation, State-wide in scope, is being considered.

As far as possible, the local county medical society should be encouraged to establish its own mental hygiene committee so that the work of the committee could have the proper professional backing. If such an arrangement can be effected the addition of lay members in the community will be necessary. In most of the rural counties the organization of the county committees along these lines has not been, as yet, as practicable as the formation of such a committee about the nucleus of large committees already doing welfare work in the field of tuberculosis, public welfare, etc. The outstanding members of the county medical society in these instances, of course, have been added to the committees so that full professional representation has been secured.

III. PUBLIC SCHOOL SYSTEM

(a) A fund should be secured for the purpose of making a research of at least two years' duration into the scope of the problem involved in the adjustment of atypical children to the public schools of New York State. Such an investigation would have as its main objective the study of children who fail to adapt themselves to the ordinary class routine and school curriculum, with special emphasis upon children showing seclusiveness, introspection, phantasy formation, emotional instability, nervousness, mental retardation, anti-social attitudes, truancy and delinquency trends—in brief, any of the manifestations usually associated with the so-called problem child. A study of this kind would probably indicate the extent of the problem involved, methods of providing adequate psychiatric, social and pedagogical approach to such types of children, as well as the placement of special emphasis upon early symptoms of neuroses, schizophrenia and anti-social types. It is conceivable that a well-planned auxiliary to the public school system may eventually lead to the prevention of many of the serious mental ills in the later life of school children.

(b) In the cities of Buffalo, Rochester, Syracuse, Utica, Schenectady, Albany and Binghamton special service should be developed in connection with bureaus of attendance. In other places existing clinics can set aside specific days or make special arrange-

ments for examination of children from this school department. As far as possible this work should be aligned with that of the clinics of the juvenile court, since truancy and delinquency are so closely inter-related. Obviously the avoidance of stigmatizing truancy cases with the term delinquency is desirable.

(c) A full time psychiatrist should be employed by the State Department of Education whose main duties should be:

1. The organization of material within the school system of New York State to facilitate the examination of problem and retarded children in child guidance clinics.

2. The development of adequate mental hygiene courses in all the normal and training schools for teachers throughout New York State, as well as in the training schools for nurses from which the largest percentage of school nurses is drawn.

3. Sensitization of school officials as to the need for mental hygiene in the public schools.

4. A research study as to the effects of the present system of mass instruction on the personality development of school children.

5. Organization of facilities for referring teachers in need of psychiatric advice to adequately trained psychiatrists throughout the State. The relation would be that of a patient to his private physician.

(d) The Division of Child Development and Parental Education established in 1928 by the State Department of Education and directed by Dr. Ruth Andrus should be encouraged to extend its activities throughout the State. Through this procedure and through the visiting teachers a direct contact of the school with the home is brought about, especially in the cases of problem children. Dr. Andrus has outlined the scope of this work as follows:

"The function of this division is to develop a coordinated State program for various institutions and agencies, public and private, interested in prevention or behavior difficulties in the home-school life of the child. The program is one of adult education, and consists in offering courses in the field of Child Development to parents-on-the-job, teachers-in-training and in-service, and to other social workers who may be interested. An important policy is to develop agencies to meet local needs. To this end, certain demon-

stration programs have been established, such as the joint program in Child Development and Parental Education carried on by Rochester University and the Board of Education for Rochester and Monroe County. This program supplements and is in turn supplemented by the mental hygiene research and service program carried out by Dr. Eric Clarke, of the Strong Memorial Hospital. The Vassar Euthenics Department is cooperating to meet the needs of Dutchess County. A third type of service is the establishment of a parental education teacher in the public school system. This teacher will teach parent groups and teachers-in-service. This work will in some cases be combined with that of the visiting teacher, vocational counselor, or with any child guidance set-up which may be part of the school system. As part of the State program Cornell University, in its Colleges of Agriculture and Home Economics, is developing both a resident service for the training of teachers of parents and extension service for the training of parents. It is hoped that by developing and establishing such centers as these and by cooperating with the various State departments and private institutions, the parents and teachers of the State may be reached. The education of high school and college students in what may be termed 'family life education' necessitates training for teachers for such situations and the revision of various curricula to meet the students' needs."

IV. COURTS AND CORRECTIONAL SYSTEMS

(a) Special psychiatric and social service for Children's Courts should be developed by the cities of Buffalo, Rochester, Syracuse, Utica and Albany. Smaller cities should receive service by means of specially developed units for Children's Court work maintained by the Division of Prevention of the State Department of Mental Hygiene. Children's Courts in rural sections can be served through the usual child guidance clinics. Sessions should be held at least every two weeks where practical so that children may be examined as soon as possible after coming to the attention of the court.

(b) While the establishment of clinic service to adult courts is a slow and tedious process, special efforts should be made to secure a certain amount of psychiatric service to magistrates'

courts and courts of domestic relations. It is conceivable that a plan similar to the Massachusetts Act of 1921 can be developed in New York State so that the psychiatric examination of prisoners can be secured before conviction. This service should devote particular attention to the suspended sentence type of offender as well as those who have committed their first offense.

(c) A psychiatric classification clinic should be developed in one of the up-State prisons similar to that now established at Sing Sing.

(d) A special bureau of psychiatric service in the State Department of Correction can profitably be developed. The function of such a bureau would include the standardization of all psychiatric work now done in the prisons, the special training of prison guards along the lines given in the Federal Department of Justice, and the making of arrangements for the examination of offenders in the county jails and penitentiaries throughout the State.

(e) The placement of psychiatric social workers as an adjunct to probation service in connection with all courts throughout the State should be undertaken. Civil service standards for probation officers and parole officers should be raised to include some knowledge of case work.

V. MENTAL HYGIENE AND THE MEDICAL PROFESSION

(a) Courses in the psychiatric departments of medical schools throughout the State should be raised to a standard approximating that of medicine, surgery and other well recognized branches of medicine. Not only should the study of the various psychoses and psychoneuroses be undertaken, but adequate courses in mental hygiene with attendant clinic service should be established.

(b) Psychiatric service in general hospitals should be established under the direction of a psychiatrist where the bed capacity of the hospital is 200 or more. This unit will serve not only as a reception service for committable types but will act as observation wards for non-committable types and as a mechanism for rendering service to patients distributed throughout the general wards of a hospital who are in need of special psychiatric attention. The psychiatric service can also maintain outpatient depart-

ments for both adult and child guidance clinics and can be linked with the medical schools for teaching purposes.

(c) Interest of the general practitioner can be secured by making available courses of instruction in universities and psychiatric institutes, seminars, demonstration clinics for the medical profession developed and maintained by the State Department of Mental Hygiene and by the participation of psychiatrists in the proceedings of county medical societies throughout the State. As far as possible psychiatric lecture courses for general practitioners should be related closely to the mental aspects of medical problems met in everyday practice. Leading practitioners in each county should be appointed to local county mental hygiene committees. This arrangement is particularly desirable in the case of the public health officers.

(d) Contact with the State Department of Health should be strengthened by facilitating the reference of cases from maternity, venereal, orthopedic and cardiac clinics; facilities should also be developed for the instruction of public health nurses and the various types of local nurses in the field of mental hygiene through courses given by the State Department.

(e) County health departments should be urged to include mental hygiene in their programs.

(f) A certain portion of the periodic health examination as being developed under special committees of each county medical society should be given over to an evaluation of the present mental health of the individual examined.

(g) Full time school physicians should be appointed in the larger centers. Whenever possible these physicians should have some mental hygiene training. Possibly facilities could be developed through the Medical Inspection Bureau of the State Department of Education and through the recently established American Association of School Physicians for annual courses in mental hygiene.

(h) Mental Hygiene activities should be expedited with county medical societies through public relations committees to be found in each county and through the enlistment of the committees on legislation of these societies in such bills as have combined medico-mental hygiene aspects. In furthering the relations of men-

tal hygiene to county medical societies, general practitioners and general hospitals it might be desirable to secure the appointment of a psychiatrist on a full time basis whose principal function will be the extension of psychiatric service in general medical work. Such an officer could visit general medical and surgical services in a semi-advisory capacity and could secure other contacts with the officials of county medical societies so as to bring about more extensive cooperation with mental hygiene activities now in force than is otherwise possible.

(1) A campaign of public education should be conducted by the State Department of Mental Hygiene, comparable to the public health campaign and anti-tuberculosis campaign of the State and City Departments of Health. This would necessitate special personnel under the Department to carry it out.

B. Objectives Tentatively Realizable within the Near Future

The foregoing paragraphs have attempted to outline a fairly complete picture. For practical purposes it is desirable to focus attention upon such of the above items as seem adequate for an immediate working program.

1. *Clinic Service.*

(a) Through the Buffalo Mental Hygiene Council a child guidance clinic on a full time basis, serviceable to all types of child welfare agents in the city of Buffalo, can be developed in connection with a group of social agencies or the Children's Hospital. The child guidance clinic about to be established at the Buffalo City Hospital should have adequate standards of psychiatric service and psychiatric social work. In this connection a survey of the mental hygiene resources and needs of Buffalo is obviously needed. Such a survey could be undertaken by the Buffalo Mental Hygiene Council. A future mental hygiene program, especially with reference to social agencies and schools, would be contingent upon the results of the survey.

(b) In Rochester the program for children is being carefully and most efficiently worked out in a county-wide manner by the various child welfare agencies through the psychiatric department of the Strong Memorial Hospital and the Society for the Prevention of Cruelty to Children. At present there is no ade-

quate program for the treatment of adult cases in the community. It is recommended that the existing children's committee enlarge the scope of its work to include the care of adults. The committee should have a county-wide mental hygiene program for both children and adults and should affiliate with the New York State Committee on Mental Hygiene so as to insure a correlation of its activities with that of other mental hygiene committees throughout the State.

(c) The Mental Hygiene Committee of the Onondaga Health Association will probably develop a child guidance clinic in connection with the Syracuse Psychopathic Hospital. The clinic will probably be located in quarters near to but not connected with the hospital itself. Efforts should be made to secure funds for this much needed clinic service which would be available to child welfare agencies throughout the county. No definite program can be laid down at present for other phases of mental hygiene work in Syracuse. It is probable that many of the activities of the mental hygiene committee will be affiliated with the Syracuse Psychopathic Hospital.

(d) In Utica the recent appointment of a psychiatrist as medical supervisor of schools and the appointment of a psychologist will advance the mental hygiene of school children. It is to be hoped that a part time unit to serve the Children's Court can be organized. Clinic service for other parts of the county should also be provided for.

(e) The appointment of a new director to the Psychopathic Division of the Albany Hospital will determine many of the most important phases of mental hygiene work in Albany county since it is planned to maintain an extensive outpatient department, with perhaps traveling clinics to adjacent counties.

(f) It is recommended that the Division of Prevention of the State Department of Mental Hygiene establish in the city of Binghamton a demonstration child guidance clinic. By this method an investigation can be made into the desirability of establishing similar clinics in the smaller cities such as Utica, Elmira and Poughkeepsie. After the demonstration has proceeded for a period of not less than three years' duration the city of Binghamton should be prepared to take over the project itself.

(g) The clinics now maintained by the State Department of Mental Hygiene in rural sections can be considerably strengthened by the employment of three additional full time psychiatric social workers so as to insure the presence of a psychiatric social worker at each child guidance clinic session. A school for the training of psychiatric social workers in one of the psychiatric hospitals as outlined in the previous paragraphs is desirable in order to secure more effective follow-up of clinic cases. The service rendered to adult cases within the community by State hospital clinics can be materially increased by the addition of a small number of psychiatrists to the staffs of a few hospitals strategically selected throughout the State with respect to the needs of clinic service. The development of the social service of State hospitals, specially as related to clinics, may be expected with the appointment of a director of social work within the State Department of Mental Hygiene.

2. *Mental Hygiene Committees.*

Within the near future county mental hygiene committees can be advantageously established in the counties of Westchester, Nassau, Dutchess, Rensselaer and Niagara. Favorable conditions within these counties make the establishment of committees a relatively easy matter.

3. *Public School System.*

Establishment of psychiatric service in the public schools of Buffalo seems urgent at this time. A full time psychiatrist to act as a director of mental hygiene activities within the schools should be appointed within the near future. This work should be closely allied to that of the special class instruction already in force and the addition of visiting teachers to the staff should be made as rapidly as possible and practicable. As soon as a child guidance clinic is established the Buffalo city schools should utilize this clinic as much as possible. A survey of the methods of handling retarded children in Buffalo schools is needed. The results of this survey would be correlated with the work undertaken by the psychiatrist.

In Rochester the work undertaken in the schools has progressed very favorably under the direction of Miss Leila Martin and Miss Edith Scott with the help of the psychiatric department of the

Strong Memorial Hospital. No immediate changes seem necessary.

In Syracuse the superintendent of schools is about to undertake a half time child guidance clinic for the schools, with the addition of a number of visiting teachers. The selection of an adequate personnel for this work is of the utmost importance. The work of the schools, of course, will be closely correlated with the proposed child guidance clinic in connection with the Syracuse Psychopathic Hospital. Therapeutic rather than diagnostic considerations should be emphasized in connection with this school work. The procedure of adequate and persistent follow-up will offset many of the tendencies noted in school clinics towards their becoming merely diagnostic classification centers.

In Utica the schools can profitably utilize ungraded classes to a greater extent than is now the case. The addition of at least three visiting teachers is also desirable.

In Schenectady the school situation is developing satisfactorily through the efforts of Dr. John E. Burke and the new superintendent of schools.

In Albany the mental hygiene activities of the schools are not being carried out as effectively as could be desired. It is recommended that the present arrangement for a limited number of physical and mental examinations of school children be extended to include a well equipped psychiatric unit on at least a half time basis.

The recent addition of a psychiatrist to the staff of the State Department of Education insures an adequate program for mental hygiene courses in the normal schools and training schools throughout the State. It is recommended that a small board of counsellors be appointed by the Commissioner of Education to advise the psychiatrist from time to time in his relation to the mental hygiene needs of the public school system. The Director of the Division of Prevention of the State Department of Mental Hygiene should be one of the members of the board of counsellors in order to secure effective correlation with the child guidance clinics of the department.

Efforts should be made immediately to secure funds for a study of the methods by which retarded children in the New York pub-

lic schools can be most adequately developed. Such a study would doubtless bring out clearly among other things the special places at which new ungraded classes should be developed.

It is recommended that the State Department of Education be urged to set aside each year a fund for a course of lectures to be given to its graduate school nurses. Such a course has already been held in Buffalo the past two years through the partial assistance of the New York State Committee on Mental Hygiene.

4. *Courts and Correctional Systems.*

The establishment of a special psychiatric unit for the Children's Court of Utica seems desirable because of the special interest taken there by the judge of the Children's Court and of the extensive service already rendered by the State Department of Mental Hygiene.

In Syracuse a special effort should be made by the Onondaga County Mental Hygiene Committee to secure funds for at least part time service to the Children's Court of that city. For several years some psychiatric work has been undertaken in a desultory fashion but lack of funds, especially in securing adequate follow-up facilities, has materially lowered the adequacy of the clinic.

5. *Mental Hygiene and the Medical Profession.*

The State Department of Mental Hygiene should be urged to undertake a campaign of public education beginning in the near future with the publication of a mental hygiene bulletin. This bulletin would act as a means for the distribution of news items of interest throughout the State. The splendid results obtained by the State Department in the preparation of pamphlets, leaflets and radio talks suggests the expansion of this service and the wider distribution of literature of this type to other sources which have not as yet been exploited. The State Committee on Mental Hygiene can assist the State Department of Mental Hygiene in these activities.

A special committee on "publicity and contacts with general medical practitioners" could profitably be appointed by the State Department of Mental Hygiene. The function of such a committee would be the securing of places for mental hygiene subjects

on the annual programs of the State Medical Society and of important County Medical Societies. Furthermore, the committee could advantageously work out means for furthering the interest of the general practitioner in the extensive activities of the State Department of Mental Hygiene now being carried on.

NON-GLUCOSE REDUCING SUBSTANCES IN THE SPINAL FLUID

(Preliminary Communication)

BY ERWIN BRAND AND CHARLES J. STUCKY

(From the Department of Chemistry, New York State Psychiatric Institute and Hospital, New York City)

In the course of the past few years it was shown by a number of investigators that the discrepancies between the results of the various blood sugar methods were due to non-glucose reducing substances. More recently it was found that these non-glucose reducing substances were present mainly in the blood corpuscles and that most of the non-sugar effect was due to glutathione.[1 2 3 4] It is thus possible not only to determine the true blood sugar, but also by means of a comparison of various methods to obtain information concerning the non-glucose reducing material.

In view of this recent progress in blood sugar chemistry, it occurred to us that it might be of interest to investigate the spinal fluid along similar lines. In regard to the non-glucose reducing material in spinal fluid, we found no definite evidence in the literature except occasional statements that a small amount of non-fermentable sugar is present. A number of spinal fluids (80 up to the present time) were examined in various ways.

Protein free filtrates were prepared from a given sample of spinal fluid by the Folin-Wu and Somogyi[6] procedures, and each filtrate was analyzed for sugar by the Hagedorn-Jensen, Folin-Wu, and Benedict (1928) methods.[1] In another series of experiments the spinal fluid was digested with yeast[1] and the glucose equivalent of the non-fermentable substances determined (usually after the addition of glucose) by the three methods mentioned above.

In some of our earlier fermentation experiments, the non-fermentable material was determined by the Folin micro method.[3] From the results it appeared that 20 to 30 per cent of the sugar in the spinal fluid was non-fermentable. These results, however, we believe are erroneous because the Folin micro method does not seem to lend itself to this type of work.

The spinal fluids that were analyzed were almost exclusively taken from patients with general paresis and encephalitis lethargica. A few representative results are shown in Tables I and II.

TABLE I

Spinal fluid, number	Methods	Reducing substance expressed as mgm. glucose per 100 cc. spinal fluid	
		Folin-Wu filtrate	Somogyi filtrate
19*	Hagedorn-Jensen	69	69
	Folin-Wu	62	62
	Benedict (1928)	61	62
29*	Hagedorn-Jensen	62	63
	Folin-Wu	61	60
	Benedict (1928)	54	53
33†	Hagedorn-Jensen	63	60
	Folin-Wu	60	63
	Benedict (1928)	58	59
36†	Hagedorn-Jensen	73	73
	Folin-Wu	70	71
	Benedict (1928)	66	67
38†	Hagedorn-Jensen	76	77
	Folin-Wu	68	70
	Benedict (1928)	70	70
47†	Hagedorn-Jensen	76	74
	Folin-Wu	68	70
	Benedict (1928)	66	65

* General paresis.

† Encephalitis lethargica.

From Table I it may be seen that with but one exception (Sp. F. 33) the values obtained by the three methods are not in close agreement and that the discrepancies are greater than the probable experimental error.* Thus the value obtained with the Benedict method is usually the lowest, the Folin-Wu figure somewhat higher, and the Hagedorn-Jensen method yields the highest result. We are inclined to interpret these differences in the sugar values as evidence of the presence of non-glucose reducing material in the spinal fluid. This interpretation is confirmed by our fermentation experiments,** some of which are reported in Table II.

* The estimations were carried out on filtrates (1:5) which were twice as concentrated as those (1:10) usually employed in blood analysis.

** We believe that the results of fermentation experiments are probably less accurate than those obtained by a comparison of various reducing methods.

TABLE II

Spinal fluid, number	Methods	Reducing substance expressed as mgm. glucose per 100 cc. spinal fluid		
		Total	Non-glucose after fermentation	True glucose
51†	Hagedorn-Jensen	71	7	64
	Folin-Wu	66	2	64
	Benedict (1928)	..	..	..
55†	Hagedorn-Jensen	64	4	60
	Folin-Wu	63	3	60
	Benedict (1928)	59	2	57
60*	Hagedorn-Jensen	73	9	64
	Folin-Wu	68	3	65
	Benedict (1928)	65	4	61
69*	Hagedorn-Jensen	127	14	113
	Folin-Wu	116	6	110
	Benedict (1928)	112	3	109
70*	Hagedorn-Jensen	64	7	57
	Folin-Wu	58	4	54
	Benedict (1928)	55	2	53
74*	Hagedorn-Jensen	65	5	60
	Folin-Wu	62	4	58
	Benedict (1928)	62	4	58

† Encephalitis lethargica.

* General paresis.

In regard to the nature of these non-fermentable reducing substances in the spinal fluid no definite suggestions can be made at the present time, except that such material does not contain any appreciable amount of glutathione. It is known that glutathione passes into Folin-Wu but not into Somogyi filtrates. An examination of Table I shows that the values obtained on the two filtrates by any particular method check rather closely. This finding seems to exclude glutathione*** as part of the non-fermentable reducing material. In this connection it should be recalled that glutathione occurs in the blood almost exclusively in the red blood corpuscles.

Further investigation on the reducing material of the spinal fluid in normal and pathological conditions will be undertaken. Thus we hope to obtain more information as to the nature of the non-glucose

***Occasional tests on spinal fluids indicated a negative nitroprusside reaction.

reducing material in the spinal fluid, its clinical significance and its possible relationship to reactions of the spinal fluid specific for various abnormal conditions.

We are indebted to Dr. H. A. Patterson and to Dr. W. R. Strutton of the Manhattan State Hospital for a number of spinal fluids.

Summary

1. The reducing material of spinal fluid was investigated in cases of general paresis and encephalitis lethargica.

2. Spinal fluid usually contains small quantities of non-glucose reducing material.

3. The non-glucose reducing material in the spinal fluid is not glutathione.

4. Spinal fluid thus differs from blood where the major part of the non-glucose reducing material is represented by glutathione.

Bibliography

1. Benedict, S. R., J. Biol. Chem., *76*, 457 (1928).
2. Benedict, S. R., and Newton, E. B., J. Biol. Chem., *83*, *361* (1929).
3. Folin, O., J. Biol. Chem., *83*, 115 (1929).
4. Herbert, F. K., and Bourne, M. C., and Groen, J., Biochem. J., *24*, 291 (1930).
5. Herbert, F. K., and Bourne, M. C., Biochem. J., *24*, 299 (1930).
6. Somogyi, M., Proc. Soc. Exper. Biol. and Med., *26*, 353 (1928-29).

GOVERNOR MARCY AND THE UTICA STATE HOSPITAL*

BY RICHARD H. HUTCHINGS, M. D.,
SUPERINTENDENT, UTICA STATE HOSPITAL

Few persons who have not made a rather close study of New York State and American history, remember that there was such a man as William L. Marcy, and yet in his day he was a commanding figure in American public life. He was successively Comptroller of the State of New York, Justice of the Supreme Court, United States Senator, Governor of New York State for three consecutive terms, Secretary of War in the cabinet of President James K. Polk and Secretary of State in the cabinet of President Franklin Pierce.

It was during his first term as Governor that he began to interest himself in suitable provisions for those who were described by another writer of the time as, "the most destitute class of the human family, who are suffering from a darkened understanding and the evils of poverty at the same time."

The State census of 1825 had disclosed that there were 280 lunatics in jails or supported by charity and 348 at large, besides 263 who were cared for by relatives. This report of the census bureau seems to have been the first publication to call public attention to the need of some suitable provision for this class of citizens. Interest in suitable provision for the insane began to be manifest in medical societies and charitable circles throughout the State, but it was not until 1830 that the matter came to the attention of the Legislature.

To quote from a memorial presented about that time to the Legislature: "There are in the State of New York one incorporated lunatic asylum and that capable of accommodating only about 150 patients and one private asylum with accommodations for about 50 patients. Both of these institutions are merely for patients who pay. It will be perceived that it cannot accommodate one-half the number who are supposed to be able to pay for their support. For the 200 pauper lunatics it may be said that there is no provision. They are permitted to roam at large, a nuisance to the community, or are confined in their own dwellings or consigned to the horrors

* Presented to the Quarterly Conference at Utica State Hospital, September 17, 1930.

of the county poor house and in either case no provision is made for their comfort or restoration to reason."

In the year 1830, Governor Throop referred to the need for a public asylum in his message and recommended that it be established. The proposal was championed in the Legislature by Mr. Weed of Monroe County and Mr. Russell of Washington County, but the whole question was referred to a select committee, which did not report that year.

However, in the following legislative session, 1831, the select committee reported and recommended that: "Public establishments for the reception and care of the insane poor are both necessary and proper and they therefore, submit to the Legislature the expediency to provide for the erection of at least one spacious and commodious hospital sufficient to accommodate at least 350 of the insane poor." From the wording of this and other reports there seems to have existed considerable doubt as to the propriety of the State embarking upon an undertaking of this kind. It was evidently an innovation in State government and the Legislature was not prepared immediately to accept it. The report was received and another select committee was appointed to examine and report on the same subject.

The second select committee made a report in the following year, 1832, but no legislative action was taken upon it.

In the legislative session of 1833 no reference was made to the subject and interest seemed to have died out. However, in 1834, Governor Marcy presented in his annual message to the Legislature, at the opening of the session, a vigorous and appealing statement from which the following is extracted:

"We should be deaf to the most powerful appeal of suffering humanity, and wanting in gratitude to God, who has endowed us with the faculty of reason, and blessed us with abundant means of administering to the wants of others, if we did not use both, for the comfort, and, to every practicable extent, for the cure of those who are deprived of these gifts. If, indeed, the diseases of the mind lay beyond the reach of human agency, it would still be our duty to afford these sufferers all the comfort and consolation which could be enjoyed in such a forlorn condition; but recent experience has proved that in a few cases only is their doom irreversible. Medi-

cal science and mental philosophy have finally obtained an almost entire dominion over these maladies. There is, however, this peculiarity in the cases of insanity, that little hope of effecting a cure can be indulged, without the conveniences of proper institutions. * * * "If the victims of disordered intellects had not been deprived of the usual means of exciting public compassion, or if they could have come forth from the places of their confinement, to exhibit their deplorable condition to the public eye, I cannot believe that a provision for their relief would have been delayed to this late day. If the claims of humanity, in this respect, have been disregarded, you have now the power, and, I doubt not, will feel the disposition to satisfy them."

At this session of the Legislature a bill was introduced by Mr. A. J. Parker to carry the proposed measure into effect. However, the Legislature adjourned before the bill was reported out of committee. In the session of 1835 Mr. Hertell of New York, chairman of the committee appointed to consider the question, presented a report and said, "your committee beg leave to remark that in their opinion enough and more than enough reports have been made on the subject and that they are decided in the opinion that such an asylum ought to be established without further unnecessary delay." A bill for that purpose was passed by the House and was read in the Senate but was not reported by the Senate committee to which it was referred.

Early in the session of 1836 the Legislature received a petition from the Medical Society of the County of Oneida and its delegate to the State Medical Society, Dr. Coventry, was instructed to invite the cooperation of the latter society. This was done, and a memorial was presented to the Legislature by the State Medical Society urging the establishment of a State lunatic asylum. Finally, on March 30, 1836, "An Act to authorize the establishment of the New York State Lunatic Asylum" was passed and was promptly signed by Governor Marcy.

The Willard Asylum was the next to be established and was opened in 1869 followed in 1871 by Hudson River, 1877 by Middletown, 1880 by Buffalo and others in succeeding years. In 1890 was passed what was called the State Care Act by which the State pledged itself to care for all indigent insane and which finally did

away with the abuses and neglect of patients in county almshouses and brought into the system, through not immediately, the New York, Brooklyn and Rochester Asylums. About 1890 the term asylum was changed to State hospital.

When, in 1912, during the administration of Governor Dix, an appropriation was made to purchase a tract of land near the City of Utica, it was definitely stated that an institution would be constructed there which would replace the Utica State Hospital. The latter institution, it was said, would then be abandoned, for the land upon which it stands had become so valuable by reason of the extension of the city around it upon three sides, that its sale would reimburse the State for the expense of the new institution. Though we now know that this was an idle dream not to be fulfilled for another generation (if ever in whole) the usual preliminaries were carried out; a commission was appointed to study available sites in the vicinity, select a suitable location and take possession of the property in the name of the State. The commission was diligent in its study of locations which promised to be available within a radius of ten miles of Utica. The only tract which met the requirements of an elevated site with nearby road, rail and water communications was one about seven miles from the City of Utica on the Rome highway lying between the Barge Canal on one side and the Black River Railroad on another. This site is in the township of Marcy and continguous to the railroad station and hamlet of the same name. It was referred to for that reason in official reports and records as the Marcy tract.

In the fullness of time, and after a lapse of about seven years during which period the property lay idle, the State recalled to mind its possession of this land and began construction of an institution there in September, 1919, when ground was broken with appropriate exercises and Governor Alfred E. Smith turned the first sod. Taking its name from the Marcy tract the new institution became the Marcy Division of the Utica State Hospital, and in the not distant future, when construction is further advanced, it will become the Marcy State Hospital.

It is a remarkable coincidence that in this informal and, one might say, accidental way, certainly without planning or forethought, there will be perpetuated in the State hospital system the

name of the Governor who championed the humanitarian undertaking which committed the State to the policy of State care of mental patients. "The mills of the Gods grind slowly but they grind exceedingly small;" though the Utica State Hospital might well have been given his name but was not, its offspring and intended successor will repair the omission and fulfill the duty. The Marcy State Hospital will bear an honorable name as a unit in the great system of hospitals and institutions which is but the development and growth of the undertaking which he advocated so eloquently in the words I have read. He may even have had some prophetic vision of the future when he wrote: "There is however, this peculiarity in the cases of insanity, that little hope of effecting a cure can be indulged without the conveniences of proper institutions." William L. Marcy may well be remembered as the father of the Department of Mental Hygiene. Were he alive today can we doubt that he would champion as forcefully and eloquently as in 1834, "the conveniences of proper institutions?"

Sketch of Governor Marcy

William L. Marcy was born in Worcester County, Mass., on December 12, 1786. He came of a family that had been prominent in a small way in public affairs. His great grandfather, Moses Marcy, was an early settler in the town of Sturbridge. He had been a colonel of militia and justice of the peace, and had held the office of moderator for 24 consecutive years.

Marcy was educated at Leicester Academy and Brown University at Providence, R. I., where he graduated in the class of 1808. Shortly afterwards he settled in the city of Troy, N. Y., where he studied law and commenced its practice. He soon allied himself with the party of Jefferson and Madison, and took an active interest in political affairs. In the war of 1812 he was a lieutenant in the infantry and took part in the campaign in northern New York. Lieut. Marcy led an attack upon a British outpost at St. Regis which was successful. He received the surrender of the garrison and the flag of the company, which was the first standard captured on land during the war. It is still preserved among the trophies in the Capitol.

He was a warm supporter of Martin VanBuren and was opposed

to Governor Clinton. As a result of this attitude he was removed from the office of recorder in 1818. He took a prominent part in the constitutional convention of 1821 and in 1823 was elected to the office of Comptroller of the State. At this time he moved his residence to Albany where he maintained it during the remainder of his life. He was prominent with Martin VanBuren and Benjamin F. Butler, Silas Wright, Horatio Seymour and others in the so-called "Albany Regency," the group of political leaders who for a number of years practically controlled the affairs of the Democratic party in the State.

In 1829 Mr. Marcy was appointed one of the Associate Justices of the Supreme Court of the State, an office which was well suited to his talents and temperament, and it was with reluctance that he resigned it in March, 1831, when he had been elected by the Legislature to the office of United States Senator. One of his first speeches in the Senate was in defense of Mr. VanBuren who had been appointed, during the recess of Congress, to the position of Ambassador to London, and whose nomination was then before the Senate and was opposed by Henry Clay, who, in a speech on the floor of the Senate charged VanBuren with having been the first to remove office holders of the opposing party. It was in this debate that the phrase "To the victor belongs the spoils" was first used. The phrase clung to the name of Marcy and it will perhaps be of interest to read just how he used it:

"It may be, sir, that the politicians of New York are not so fastidious as some gentlemen are, as to disclosing the principles on which they act. They boldly preach what they practice. When they are contending for victory, they avow their intention of enjoying the fruits of it. If they are defeated they expect to retire from office; if they are successful they claim, as a matter of right, the advantages of success. They see nothing wrong in the rule, that to the victor belong the spoils of the enemy.

"But if there be anything wrong in the policy which the senator from Kentucky has so strongly reprobated, he should know that this policy is not confined to the minister to London and his friends in New York, but is practiced by his (Mr. Clay's) own political friends in that state; he should know, that if to one man, more than any other now living, the existence of that policy is to be

ascribed, it is to one of the senator's own political friends." (Ambrose Spencer.)

Mr. Marcy's service in the Senate proved to be brief, less than two years. Devoted as he was to the interests of his party, he had resigned from the Supreme Court, an office which was pleasing to his temperament and taste, after two years upon his nomination to the senatorship and again he was called upon in December, 1832, to leave his senatorial duties to become Governor of New York. In the Herkimer convention held in September, 1832, Senator Marcy had received on the first ballot 113 of the 119 votes cast.

Governor Marcy's three terms in the executive office were characterized by his application to practical measures for developing the resources of the State and establishing a sound financial system, which up to that time had been chiefly notable for the lack of it. During his term as Governor, he, with John A. Dix, then Secretary of State at Albany, who was keenly interested in the project, succeeded in obtaining the first geological survey of the State, and the highest point, until then called the "High Peak of Essex" was renamed on the geological maps, Mount Marcy. It was in 1832 and while he was United States Senator, that he visited Oneida County and a new township, separated from the town of Deerfield about that time, was named in his honor.

As Secretary of War and later as Secretary of State, Mr. Marcy was called upon to exercise an influence of far-reaching significance in the future of the nation. The war with Mexico was waged under his direction and he had an important part in its successful conduct, which added a vast domain to the area of the United States.

As Secretary of State he was concerned with a number of epoch-making events in America's foreign policy. He dealt successfully with vexatious diplomatic conflicts among them that with Spain (the Black Warrior affair); England (at-War); Austria; the Martin Koszia Case (the protection of a naturalized American citizen abroad); and the negotiation of the Gadsden treaty with Mexico by which the United States acquired, for the sum of $10,000,000 the area which comprises the states of New Mexico and Arizona. Marcy believed strongly in "State Rights" and held himself aloof from all controversy concerning the slavery question which already was looming large on the horizon. The

decade preceding the Civil War has been of interest to historians chiefly in events and trends leading up to that great conflict and the fact that Marcy had no part in them is accounted for by the historian, Learned, as the reason why his career has not been given greater consideration by them.

Commenting upon Marcy's contributions to diplomatic literature the latter author remarks: "Considered together, these State papers indicate a man of large intellectual mould rightfully characterized as a statesman."

Marcy retired from public life at the end of the Pierce administration March 4, 1857. He was then in his 71st year but apparently in vigorous health and planned to travel abroad. His death occurred quietly and suddenly on July 4 of that year in a hotel in Ballston Spa as he reclined on a couch in his room reading. His remains lie buried in Rural Cemetery, five miles north of Albany and over his grave is a simple granite shaft inscribed:

WILLIAM L. MARCY
BORN DECEMBER 12, 1786
DIED JULY 4, 1857

REFERENCES

Dr. Amariah Brigham, 4th Annual Report of the New York State Lunatic Asylum.
Henry Barrett Learned, The American Secretaries of State and Their Diplomacies.
John S. Jenkins, The Governors of New York State.
Pomeroy Jones, Annals of Oneida County.

THE DEPARTMENT OF MENTAL HYGIENE AND A BOND ISSUE*

BY FREDERICK W. PARSONS, M. D.,
STATE COMMISSIONER OF MENTAL HYGIENE

One safely can infer that all today present are interested in the fortunes of New York State's Department of Mental Hygiene, which has under its jurisdiction the institutions for the insane, the mental defectives and the epileptics. The interest of some is centered in a particular institution. Others have a general State-wide institutional interest and the thoughts of still others are directed more to the general community mental hygiene problem than to the institutional aspect of it. We are in some way concerned and all desire that New York should make suitable provision for those unfortunately not able to manage for themselves. Suitable provision can be conceived as of something more than the daily requirements of the patient for the creature needs of skilled attention, food and clothing. Without shelter none of the foregoing can be given, and, if unavailable, shelter cannot be provided quickly. The needs of the future have to be anticipated several years in advance and plans accordingly made.

The needs of the department may be considered under the three administrative divisions:

For the whole State we have for epileptics one institution, remotely located at Sonyea. Craig Colony was conceived as a place where studies of the nature and cause of epilepsy experimentally might be made. Later it was called upon to relieve county houses of individuals needing better attention than they were able to have in almhouses and it is now largely devoted to the custodial care of an unhappy group. Long continued epilepsy is followed by intellectual deterioration and many cases now at Craig Colony differ only slightly from low grade defectives or deteriorated cases of dementia præcox. If their convulsions were controlled they could not be returned to the community as socially valuable. The department should consider the desirability of attempting to restore Craig Colony to its original purpose and to keep there only those epileptics who have a salvage possibility, caring for those who have failed to respond to treatment in other institutions of the department.

* Presented to the Quarterly Conference at Utica State Hospital, September 17, 1930.

The situation in respect to the State schools is not entirely satisfactory. With the complete occupation of the buildings now under construction we should be better off than we have been in years. There are contingencies, which if they should become certainties, would alter that comfortable state of affairs and still further provision may have to be sought.

No one knows the number of feebleminded persons for whom institutional provision should have been made available. The schools accepted applications for admission on a quota based on the county population. Knowledge that accommodation was not available for all who applied has resulted in decreased applications and admission was sought only for those whose situation was desperate.

There is an unfortunate conflict of interests between the State schools and the community. Institutions prefer to receive moderately high grade teachable and trainable individuals who can be returned to the community in better condition than when admitted. They also take, and not unwillingly, the very low grade for whom there are no local facilities. The community is glad to be relieved of the low grade cases but it does not relish the subsequent return of the higher types. Those interested in controlling the local sore spots like to feel that when a feebleminded person is once sent to a State institution he will be permanently confined. The return of these people is a constant source of disharmony. The institutions believe they cannot surrender the right to say who shall stay and who may go out and the local authorities feel that they know best the local conditions and remind us of any failures of adaptation.

For the feebleminded the State has provided Letchworth, Newark, Rome and Syracuse. Two only, Letchworth and Rome, have taken both sexes and all grades. Newark originally received women only during the reproductive period and Syracuse takes high grade defective children of school age. The department believes that all its institutions for the mentally defective should take every case from a definite State district, but the geographical distribution of the institutions is inconvenient. Three of the schools, Newark, Rome and Syracuse, are close together and as they have had to help the metropolitan district there are down-State children in the up-State institutions. This situation is being improved but is not

being fully corrected. The new institution under construction at Wassaic will relieve up-State institutions of the down-State children, and the construction at Newark will provide accommodations for 500 males, permitting that institution to take boys as well as girls. The extreme western part of the State is not fully covered but the situation will be better when Newark can take both sexes and all types. The Syracuse buildings are old and hemmed in by the rapidly growing city. The general State situation would be greatly improved if Syracuse State School were abandoned and a new development started further west.

The care of those suffering from mental diseases presents the largest departmental problem. Persons in increasing numbers require admission. The institutions are overcrowded, and while from previous money considerable construction has been completed, and more is under way, a survey indicates much construction is needed in nearly every one of the existing institutions.

Some time ago I asked the superintendents to suggest construction which in their opinion would round out their facilities. From the answers I have many valuable suggestions and I prepared a list of construction which could be undertaken advantageously. Some of it is urgent and some merely gives to institutions facilities which they need but which can be deferred. For example: Not a few institutions are caring for feeble and bedridden patients in buildings which lack the conveniences for persons of that class. The patients would be better served if they were in suitable buildings but they can be provided, somewhat inconveniently it is true, with the necessities without additional construction. There are pressing needs in practically every institution, so that if we are so fortunate as to have additional funds in substantial amounts there will be expenditures in all parts of the State. From the list of desired additions we will select the construction most suitable to the needs and we shall find in 1935 every institution better fitted to minister to the community.

From money heretofore made available, beds for patients were the first consideration. In relatively few instances were accommodations for necessary staff and personnel completely realized. We are now faced with the anomalous situation of having to give to employees the accommodations built for patients. We are not able

to provide places for the employees needed to care for the patients for whom we have built. Water supplies are inadequate, sewage facilities overtaxed, in some instances power houses have no reserves of heat and electric current and storehouses are too small to accommodate the provisions necessary for patients. Was it bad planning? I think not. It seemed desirable to provide the essentials first and improvise the unessentials and correct them later.

When we have realized what we now have under way our situation would not be desperate if conditions remained unaltered. But conditions will not remain unchanged. We will be adding each year the normal increase and shortly we will have to change definitely our estimate that an additional 1,500 patients will come to us each year. Two thousand probably will be the average for the next five years. By the end of 1935 we can expect the normal increase to be 10,000 patients.

At the Manhattan State Hospital we have 7,000 patients. We do not own the property. The people of New York City look longingly at the land, and as it is their's and they need it for their own purposes, we must expect them to take it. In that large hospital we have only 600 beds worth keeping. That is not an economical size for a metropolitan hospital. With the uncertain tenure which we have on the land it is not wise to undertake a building program on Ward's Island, and many of the structures in which patients are housed have to be abandoned. Whether or not we continue to use these buildings is not a question of their suitability for human habitation. Literally some structures will fall down in a year or two. We are caring for 1,600 patients in temporary, war-built structures, which when they were erected, no one ever believed would last so long. I refer to those lath and stucco buildings built by the Navy and given to the State when the Federal purposes had been served. Most of you are familiar with the other old buildings, dangerous, dark and forbidding in appearance, with floors worn through, doors and windows bearing the scars of years of occupancy, antiquated plumbing and deteriorated plaster falling from large areas. To make them attractive in appearance and fit for decent occupancy will cost large sums and there would still remain the awful fire hazard. With the certainty of having to surrender the land to New York City ordinary good business judgment demands that the

State acquire a new site, erect new buildings and completely evacuate the Manhattan State Hospital, now located on Ward's Island.

I have touched only the high spots. What I have indicated means more than a hundred million dollars. From where will this money come? Those whose duty it is to estimate the State's revenue say that the money likely to come into the treasury in the immediate future will not equal the averages of the past five years. There is no possibility of getting this money from current revenue. A bond issue is the answer.

By an act of the Legislature the voters at the next election will decide whether or not the State may issue bonds to the extent of fifty million dollars if current revenue will not provide that sum. The money is to provide for the needs of the Department of Correction and the Department of Mental Hygiene. Our department expects from thirty-five to forty million dollars. Our needs exceed that sum but if it is forthcoming we shall have, in all parts of the State, facilities which will enable the institutions to meet the community demands. It can be had if we make our necessities known to the voters. To do that we shall all have to work and I hope you will actively participate in the campaign. More will be said later.

NEEDS OF THE STATE DEPARTMENT OF CORRECTION*

BY WALTER N. THAYER, M. D.,
COMMISSIONER OF CORRECTION

The Department of Correction today has four State prisons, and another in course of construction. It has two State hospitals for the convict insane—Dannemora and Matteawan; it has a State training school for women at Albion in the western part of the State; it has a reformatory at Elmira; a women's reformatory at Bedford Hills, and it also has an institution for defective delinquents at Napanoch. So it is no mean department.

When I hear the Department of Mental Hygiene talk of lack of progress in 40 years, I think, Commissioner Parsons, that you are to be congratulated upon the very marked advance and progress that you have been able to secure in that period of time. When you consider that the prisons at Auburn and Sing Sing were built in 1816 and 1820; when you consider that the prison at Dannemora was begun in 1845, and that at that time the State of New York had only two and a half million people when today we estimate them at least five times that number; and when you think there have been only 1,040 cells added to the Department of Correction in that time, and that, although we have improved housing at Sing Sing, the housing at Auburn and Clinton are of the vintage of 1816, then I think you will agree with me that we need something for the Department of Correction.

In addition to this in the past few years the average prison sentence has been doubled by the so-called Baumes Law. Moreover, the ability to shorten sentences by commutation has been taken away. When you stop to consider that 94 per cent, plus, of the men committed to State prisons are to be returned to society some time it seems to me the existence of these very inadequate, archaic and antiquated conditions in the Department of Correction certainly does cry out for relief, and it also seems to me that perhaps it explains very largely the reasons for the overcrowding in the Department of Correction. One way, perhaps, in which we differ from the Department of Mental Hygiene is that 94 per cent of these men must go back in society and our particular job is to fit them so that they will function in society. I feel in regard to the restoration of these men to society on a social basis that the State has not recognized that certain facilities should be given to the

* Presented to the Quarterly Conference at Utica State Hospital, September 17, 1930.

Department of Correction for the purpose of rehabilitating those who are committed to its care and who must go out because of the expiration of their sentence. In Auburn and Clinton prisons we still have the vile, old bucket system, requiring men to exist in what are practically crypts with this pernicious system,—I was going to say of sanitation,—but I do not know the right word to use in that particular spot. You, as Dr. Davies has said, have your needs and these were placed before the people of the State in a very striking manner by the fire at Ward's Island. Perhaps because of the equally unfortunate occurrences in the prisons during the past year the needs of the Department of Correction have been advertised. I sincerely hope with Dr. Davies that there will be no over-emphasis of that character placed upon our needs, but we do need better prison buildings. New York should hang its head in shame at the conditions in these old prisons. I have visited prisons all over the United States and I do not know where I would go for a duplicate of some of the old cells at Sing Sing and at Auburn. As citizens of this State, I repeat, we should hang our heads in shame at these conditions. I am not a sentimentalist on the subject and have never been accused of being one. I do not want to make prisons more attractive to the men who go there than conditions outside. But, if we secure any results it will be in training these men in social habits so that they can go back to society and sin no more. To do this we must treat them like human beings. Some of them differ from you and me simply because they were caught. There is no question about it. Back in society they will be utterly unfitted by their experience to compete with and to live amongst their neighbors.

I think that New York owes at least decent housing to the men who are locked up. I am not asking for too much in other ways, but that one thing I think we should have. The Department of Correction has a program for the razing of the old cell houses in Clinton and Auburn, and the substitution of modern cells. It also wants to supplement the institutions in the Department of Correction by a new institution, something I have described as a "Super-Elmira" for the most hopeful class of men. It wants to hold out transfer to it as an incentive to the men committed to the Department, as an evidence they are on their way back into the community. It wants another Napanoch somewhere in the western part of the

State. Napanoch with a certified capacity of 496, and with 770 inmates, is unable to take transfers from State institutions of men who are fitted to be cared for in that institution. Given those two institutions, Auburn and Clinton modernized, with the necessary additions to Dannemora and Matteawan State Hospitals, some modifications of other conditions and different parole provisions and we can meet the estimated need for housing 9,000 in the major prisons of the State in 1935. I am speaking not of Elmira, not of Napanoch, not of Dannemora or Matteawan, not of Albion, but of the major prisons and we estimate that to be an approximately accurate figure.

So you see our needs and I am wondering whether we will have to have another bond issue if the Department of Mental Hygiene gets away with 80 per cent of this one. I do not question your needs, but I think the Department of Correction is crying out for just as necessary reconstruction and new construction. I haven't much more to say to you. That is the message from the Department of Correction.

But why a bond issue? Well, because that seems to be the technique, the right technique to use. It reminds me of a golf story that might have happened to any one of you, to Dr. Hutchings who wins a cup or to Dr. Gray who tries to win one; that story of a chap who was playing around the golf course and a caddy rushed up to him and said there was a man down in the sandtrap beating his wife over the head with a golf club. This golfer straightened up and started to go in that direction, but stopped and said, "How big is this fellow?"

The caddy answered, "About six feet four inches."

Then the golfer said, "What club is he using?"

The caddy replied, "The niblic."

"Well," said the golfer, "that is the right club to use in a sandtrap."

The bond issue is the right club to use in this emergency. I do not have to tell you why. It has been more ably told to you by the preceding speakers. There is a very real need in the Department of Correction, and if the State is coming to its senses in the matter of the treatment of the criminal it seems to me this is the psychological moment for us to put forth every effort in our power to secure the passage of the bond issue proposal.

THE STATE AND ITS INSTITUTION POLICY*

BY STANLEY P. DAVIES, PH. D.,
ASSISTANT SECRETARY, STATE CHARITIES AID ASSOCIATION

Two score years ago the Legislature and the Governor of the State of New York enacted an epoch-making law "to promote the care and curative treatment of the pauper and indigent insane in the counties of this State" in which it was written:

> "It is the intent and meaning of this Act that * * * no insane person shall be permitted to remain under county care, but that all of the insane who are now, or may thereafter become a public charge, shall be transferred to the respective State asylums without unnecessary delay, there to be regarded and known as the wards of the State and to be wholly supported by the State."

This State Care Act of 1890 which marked the beginning of our present State hospital system and policy laid upon the State just as great a moral responsibility as that much cherished provision of the State constitution so frequently referred to as a bulwark of our democracy:

> "The Legislature shall provide for the maintenance and support of a system of free common schools wherein all the children of this State may be educated."

There has been overcrowding and part time in our public schools but the citizenship has not been willing to tolerate such conditions for long and has bent every effort toward the provision of new school accommodations so that every child might have in every grade his full share of educational opportunities. Even in New York City where the problem of making adequate school provision has been greatest the opening of the fall term practically marked the end of overcrowding and part time.

Yet in our State hospital system, after four decades, it stands to the shame of this State that the overcrowding of our State hospitals is greater than it has ever been. To permit this condition to continue is a definite violation of the solemn obligation which the State undertook in 1890.

Overcrowding in the public schools means part time, and part time means giving our children less education than they should be receiving. Overcrowding in the State hospitals means actual physical *overcrowding,* and overcrowding means not only discomfort

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and unhygienic living and sleeping conditions, but more seriously it means that the thousands of patients seeking our State hospitals as a place of treatment and cure are receiving less treatment and cure than the State should be able to give them.

A great State like this should not be in the ludicrous and shameful position of still trying, after four decades, to catch up with itself in its hospital provisions and finding itself, as now, further than ever behind in the race. The last monthly report of the State Department of Mental Hygiene shows an overcrowding on August 31, 1930, of 12,844 patients beyond normal capacity or 36.8 per cent, the greatest of any year to date.

While hospital provision for the mentally ill in our State hospitals constitutes the largest part of the problem, the State has also undertaken the further obligation of providing institutional care and treatment for its unfortunates who are mentally defective and epileptic. In its institutional provision for this class the State has lagged as seriously as in its care of the insane. Local welfare officials and social and health workers in all parts of the State will bear testimony to the inadequacy of the State's provision for this class and to the serious community problems which are engendered by their inability to obtain State institutional care for large numbers of these needy and troublesome individuals. A recent report made by the State Association of County Commissioners of Public Welfare showed 11,106 feebleminded persons known to officials for whom institutional care was needed and was not obtainable. Having undertaken the care of this class as a State policy it is the plain duty of the State to carry out its full responsibility and not by its inaction leave to the local community embarrassing and serious problems with which it has no provisions to deal because theoretically the State is attending to the problem.

The policy of adequately financing State institutional building is wholly a practical business question. Until recently, with the exception of the previous bond issue, without which the present situation would be vastly worse than it is, the State has gone about the problem in short-sighted, higgledy piggledy, piece-meal fashion. There has been a conspicuous lack of long range planning and of a consistent policy. It seem obvious from a business point of view that the only real way out of this situation is the adoption of a large

and comprehensive building program commensurate with the needs of the next five years, such as has already been developed by the State Department of Mental Hygiene, and the definite provision of the funds necessary to carry out the outlined projects within the same period of time. All past experience indicates that only by means of a bond issue can such sums be made available within the specified time.

We who are here today, comprising the official staffs, boards and friends of the State's institutions, do not need to be persuaded to vote for the bond issue, but it is upon us that the task of persuading the citizens of the State to approve this bond issue most directly falls.

NEEDS OF THE STATE SCHOOLS FOR THE FEEBLEMINDED*

BY FRANKLIN B. KIRKBRIDE,
MEMBER OF THE BOARD OF VISITORS OF LETCHWORTH VILLAGE

In an article in the current issue of the "Forum" entitled "When Animals Were Criminals" the author shows how primitive man ascribed life and personality to things; describes how in ancient Greece the instrument with which a citizen was killed was brought to trial, and if found guilty, was cast beyond territorial borders, just as the New York City police department today casts confiscated weapons and other tools of crime into the waters of the Atlantic Ocean.

Famous trials of domestic animals, rats, mice, locusts, grasshoppers, weevils, mosquitoes, flies, ants, vermin, snakes even, are found in the records of criminal and ecclesiastical jurisprudence. I wonder if the author is not right in his finding that the "medieval attitude" towards punishment of animals is still the popular attitude toward the punishment of human offenders.

Today our schools for the feebleminded are a visible protest against this same "medieval mind."

One of the effective series of leaflets distributed during the bond issue campaign of 1923 was entitled "On the Inside Looking Out." I want to reverse that statement and to talk for a moment "From the Outside Looking In."

How does the sovereign citizen, on whom we in this room must rely, in the final analysis, regard the work we are called on to perform?

Are we not all first and foremost taxpayers, vitally interested in keeping taxes down and in the economical and effective expenditure of public money?

In the old days, on my fishing trips, I used to drive in from Forestport to Honnedaga in a buckboard, over what was by courtesy called a road, which was never touched except during a few days before election, at which time every able bodied voter seemed to get on the public payroll. Sections of good road were built in those days that led nowhere, but everybody knew why. It was typical of much public administration of that day.

Now the conservation of natural resources, the protection of for-

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ests and wild life, the development of parks and parkways are treated rightly as public functions.

Communication, transportation, the creation and distribution of electrical energy are regulated in the public interest.

If this conservation of natural resources is important, if pure air, pure water, clean milk, are admittedly essential to human welfare, how much more vital is the conservation of normal human life!

The conservation of human life is fundamental. What good is "life, liberty and the pursuit of happiness" if the right to be well-born is denied?

Health, education, correction, mental hygiene—there are no more important functions of government in a free county.

In the old days the State schools for the feebleminded had no one at Albany to fight their battles. Take my own case as an example: I once had to chase a politically-minded State engineer by train, buckboard and trail into the fastness of the Adirondack forest; I have carried emergency messages from the executive chamber to the speaker, when the chief executive and Legislature were not on speaking terms. I have sat in the small hours of the night in the bar-room of the Murray Hill Hotel, when legislative investigating committees debated with Charlie Hotaling, the sergeant-at-arms, as to what would happen if somebody undertook to investigate the expenses of the investigating committees.

I have seen Joe Allds, sitting by the highroad, while a broken-down motor car of an early vintage was being repaired, won over by the label on a non-medicinal package.

I have had Senator Grady, prince of parliamentarians, my staunch friend and violent opponent on the floor, show me how to get John Raines' vote. I have had to "smoke out" a finance committee chairman by first getting his constituency and then keeping at it till he called me off. I have sat humbly in the big executive chamber, safely out of range, and watched one Governor engage in a long-distance expectorating exhibition, while his predecessors unmoved, looked down gravely at him from the walls.

But enough of the past.—We visitors now sit back at our ease, attend monthly at our institutions, enjoy the hospitality of quarterly conferences, pride ourselves on the improved order of things,

collect our monthly expense accounts and let the Commissioner pull the laboring oar!

Dr. Parsons and the Department at Albany are constantly fighting our battles.

I wonder sometimes if it is not too easy, if our muscles may not be getting flabby, whether it might not be better for us individually if we still had to say, like William Penn, at the close of a life rich in achievement, "I have been sailing all my life against wind and tide." I keep wondering if we individually are of the greatest possible help to Commissioner Parsons and whether we are not relying too much on him.

The Boards of Visitors can be of real value to their institutions in many ways and especially in maintaining a flexibility in the conduct of each individual school, in order to maintain the highest type of excellence.

Rigid system there must be in an economically and efficiently conducted department, but within that system flexibility is equally essential. Where it does not exist, it is simply an excuse for beating round the bush, lowering standards, waste, inefficiency or worse.

The department at Albany is charged with the duty of providing adequately for the maintenance of inmates, officers, employees and plant. The department knows that "the best institutions, best built and best managed are always cheapest in the end."

There should be appropriated from the proceeds of the proposed bond issue, or from current revenues, whatever sums may be required to complete each institution promptly.

Surveys, brought up to date periodically, should determine the location and size of new schools for the feebleminded. It is little short of idiocy to project and commence new institutions before the existing schools are operating at capacity. Size should be definitely limited. Districting has been adopted as a policy and should eventually be adhered to more strictly.

As I see it, the important problem is to get the people of the State to realize that a definite, consistent and progressive policy, looking to future needs, is being carried out with courage, intelligence and vision.

Next, to secure the adoption of the bond issue proposed by the people. We are asking for another "blank check" in the form of a

bond issue. And we are asking for it with assurance, as the results of the last two bond issues have marked a new milestone in advancing State projects.

On January 24, 1927, Governor Smith transmitted a special message to the Legislature, explaining the disposition made of moneys from the Fifty Million Bond Issue for hospitals and charitable institutions and the first Ten Million of the Hundred Million Dollar Bond Issue for Public Improvements.

Let me read a paragraph from that message:

> "The foregoing is a complete account of the accomplishments under the two bond issues. I have set it forth in detail to the end that the people of the State may know exactly what is being done with the money they authorized the Legislature to borrow in their name. I have always felt that in the past sufficient detailed information as to what was taking place was not available to the general public. *Had such information been available, provision to prevent overcrowding in the institutions and to meet the absolute needs of the State for its public charges would have been made long ago by the force of enlightened public opinion.*"

There is the kernel of the whole matter and it tells you what your duty is—and mine.

Help to create an enlightened public opinion and the job is done.

Will Rogers says this autumn only the candidates are interested in politics and that the people as a whole are as indifferent to politics as to long-length underwear.

Our greatest danger is indifference.

The people of this State have never turned down a non-partisan authorization for the expenditure of public money, for an essential matter, when aroused to its necessity.

Our function is to arouse an enlightened public opinion.

BOOK REVIEWS

How the Feebleminded Live in the Community. By CLARA HARRISON TOWN and GRACE E. HILL. Buffalo Children's Aid Society, 1930. 284 pages.

This is another after-care study of the feebleminded, made this time from the point of view of a social agency. The director of the Department of Psychology of the Buffalo Children's Aid Society, Dr. Clara Harrison Town, with the aid of a social investigator, Miss Grace E. Hill, followed up and obtained information on all Erie County cases discharged from the Rome State School during the years 1905-1924, inclusive. A total of 136 cases forms the subject of the report. Of these, there were 88 males, of whom 79 were single and 9 married, and 48 females, of whom 20 were single and 28 married.

Dr. Town's three criteria of success taken together set up unusually high standards of community adjustment of the feebleminded:

1. Ability to support self.
2. Ability to regulate life without assistance, either financial or supervisory, from family or agency.
3. Ability to live without infringing upon the law to the extent of arrest or commitment to some type of correctional institution.

Twenty-two individuals, or 16 per cent of the total group of 136 were completely self-supporting without supervision or material aid. Nine were self-supporting under supervision, and 18 partly self-supporting. Those more or less self-supporting totalled 49, or 37 per cent of the entire group of 136. Deducting from these 49 the flagrant behavior failures, including those who had served prison sentences, had committed criminal offenses, or were sexually immoral, as well as two who died, leaves 19, or 14 per cent of the 136, who, in Dr. Town's judgment, "have made a fair adaptation to community life."

The remaining 87, or 63 per cent, were not self-supporting, and are reported as "absolute failures from the economic point of view." There was also a large percentage of social failures in this group.

Dr. Town has set a high standard by which to judge the discharged cases, but she has also set a high standard for her own work. The study is most painstaking and thorough, and shows searching analysis and splendid organization of the material. By tables, charts and descriptive text, the data gathered are presented from every angle of interest: sex, age, marital status, nativity, mental age, education, length of time in institution, length

of time out of institution, occupation, parentage, home status, and family conditions, etc. The bulk of the volume, 174 of its 284 pages, is given over to individual histories of each of the 136 cases.

It is a rather sorry picture which Dr. Town presents of the community records of these discharged cases. Her study shows the social adjustment of the feebleminded in a much less favorable light than did Fernald at Waverly, Storrs at Letchworth Village, and others. This is at least in part explained by the unusually high standards of adaptation established by Dr. Town, her interpretation of success and failure, and her emphasis. Also, those discharged in a large city presumably do less well than those in country and villages. Moreover, for the supervising of cases in Buffalo, a long distance from Rome, the institution had to rely almost entirely upon the volunteer assistance of local agencies.

The chief explanation probably lies in the fact that the Rome institution, under Dr. Bernstein's leadership, has deliberately pursued a much more liberal policy as to parole and discharge than perhaps any other institution in the country. Dr. Bernstein has done this in order to give the advantages of institutional care and training to the largest possible number. Dr. Town herself points out that because of the all-too-limited accommodations in State institutions for this class, only 39 of 180 urgent cases for whom her society requested institutional commitment were admitted to State institutions. Dr. Bernstein frankly released to the community many cases who might not have been released if institutional accommodations had been adequate for all, in order to admit serious cases in more urgent need of institutional care. It was, in a sense, often a choice of the lesser between two evils. Moreover, a large number of those discharged were not released with the approval of the institution. Thirty of those studied by Dr. Town had escaped from the institution, and not being located, were discharged as a routine procedure. Many others were discharged against the advice of the institution under pressure of relatives.

That there should apparently have been so large a percentage of failures in this particular group, does not condemn the modern program of using the institution and its colonies as a training center for community life. Dr. Town wisely does not let the results of her study turn her face on the modern mental deficiency program. She rather uses her findings—and rightly—to make a plea for the strengthening of that program at its weakest points.

The final chapter of Dr. Town's book consists entirely of constructive conclusions. The social and industrial training of the mentally deficient, both in institutions and special classes, must be even more effectively adapted than at present to the special needs and limitations of this group. A much larger number of trained workers needs to be made available by

the State for the careful and continuous supervision of paroled and discharged cases. After-care supervision is also greatly needed for special class children upon leaving the public schools at the age of 16. If Dr. Town's book is the means, as it should be, of arousing those concerned with the mental deficiency program, and its financing to the meeting of these needs, her painstaking work will indeed be well rewarded.

STANLEY P. DAVIES.

Applied Bacteriology for Nurses. By CHARLES F. BOLDUAN, M. D., Director, Bureau of Health Education, Department of Health, City of New York. Sixth edition, revised and enlarged. 12 mo. of 251 pages with 80 illustrations. W. B. Saunders Company, 1930. Cloth, $2.00

This very successful manual on bacteriology for nurses has been revised and reprinted a number of times and in this, the sixth edition, the author has incorporated many important new and up-to-date facts essential to nurses. A description of undulant fever, tularemia, the Semper Method of immunizing against rabies and other recent advances have been added to improve the text.

We congratulate the author on his happy faculty of expressing himself so clearly, and anticipate a cordial reception of this edition.

GRAY.

Ethics—Talks to Nurses. By MARY E. GLADWIN. 12 mo. of 281 pages. W. B. Saunders Company, Philadelphia and London, 1930. Cloth, $2.00 net.

When the student enters training she finds herself in a new and strange environment. She needs counsel and advice in order to meet the new situations and the difficult problems. Miss Gladwin has written a book which guides the student in a charming manner in the right and wrong of conduct. The book is written in an interesting, modern way that holds attention and should give the student a thorough understanding of her demeanor in all those difficult situations peculiar to nursing.

The author deals with the school and its influence on the student, the nurse's special problems in this modern age, the nurse's duties to herself and others. There are chapters on observation, gossip, truth, discipline, punctiliousness, good manners and other important topics. The question of gifts and fees, hobbies and recreations, and the nurse's attitude toward the opposite sex is brought to the student in a frank and pleasant way which reflects the mature judgment of the writer.

The student nurse should add the book to her library; the teacher will find it a help in her every day duties.

WORTHING.

Psychiatry in Industry. By V. V. ANDERSON, M. D. 364 pages. Harper & Bros., New York.

In his book, "Psychiatry in Industry," Dr. V. V. Anderson reviews his four-year study of personnel problems while Director of Medical Research, Macy & Company, New York. He presents the psychiatric approach, the study and treatment of the misfit, selecting executives, the placement and guidance of young workers, the selection of different groups, personnel surveys, and psychiatric problems in relation to health, physical and mental.

About 20 per cent of the employees are found to be problem individuals, that is either liabilities or potential liabilities to the business man. As the psychiatrist sees them, the work failures result from a mal-adjusted personality, specialized job disabilities or faulty physical conditions. Many of these individuals may be adjusted and become assets to the employer, thus cutting down turnover and increasing production and efficiency. It is felt that business and industry cannot escape the social responsibility involved, as these unadjusted individuals are potential drifters, delinquents, dependents or psychopaths.

In the study of these cases the personnel consisted of psychiatrist, psychologist and psychiatric social worker. The author feels that the "total situation" in psychology must be used as opposed to purely test psychology, as the field is a broad and complex one. The adjustment history is recorded by a psychiatric social worker and is taken from the actual behavior of the individual at work. A battery of psychological tests is utilized by the psychologist, and a thorough physical examination is given. The psychiatrist in his interview carries on a personality investigation as to the individual's habits, attitude toward himself and others, interests, hopes, fears and driving forces. The author reviews job and personnel surveys which were made for the purpose of securing better placement of employees and increasing efficiency. As the result of these reviews, recommendations were made and follow-up instituted which resulted in distinct improvement. The role of psychiatry in industrial health work is outlined and the problems seen by the psychiatrist classified into (1) chronic hospital users, (2) compensation and sick leave cases, (3) situation reaction cases, (4) fatigue problems, (5) cases where nervous and mental disease is suspected.

With a store personnel of between eight and ten thousand employees the medical department has approximately sixty thousand consultations yearly.

Psychological tests are discussed in some detail. Many jobs in a department store require the possession of abilities, depending on personality make-up rather than on measurable capacities. The particular tests used are determined by the nature of the problem and work which the employee is expected to do.

This book is of more than academic interest. It is a unique and useful addition to the bibliography of either psychiatrist or business man. It emphasizes the necessity of a thorough understanding of the individual in industry.

TOWER.

The Money Value of a Man. By LOUIS I. DUBLIN, Ph. D., and ALFRED J. LOTKA, D. Sc. The Ronald Press Company, New York.

For some time Dr. Dublin and his associates in the Statistical Bureau of the Metropolitan Life Insurance Company have been studying the relation of health to wealth. Some earlier results of these studies have already been noted in THE PSYCHIATRIC QUARTERLY. The present volume carries the studies to a logical, culminating point. If health from a practical point of view, may be translated into terms of wealth, it clearly follows that we can assign an economic value to any individual.

It is evident that a man has a given earning capacity in a life time. From his total earnings one may deduct the cost of his upbringing until he becomes self-supporting and the subsequent expenditures for food, clothing, shelter, etc. The difference between the present worth of the gross future earnings and the present worth of the total future costs at any age, would represent the value of a man at that age. This value is naturally small at birth and in old age (since the future costs are great in the former, and the future earnings small in the latter) and reaches a maximum, between 30 and 40 years of age.

The values clearly vary with the earning capacity of a man. For the bulk of wage earners, the authors have estimated a maximum earning power of $2,500 per year. In accordance with this estimate, the gross future earnings have been calculated for various ages from birth to old age, and the present value of these amounts determined.. Similar estimates have been made for other income groups.

The applications of these results are very important. As the authors point out, they may be used in determining the proper awards in accident and compensation cases. They are a very precise measure of the losses due to disease and mortality. And they have, of course, a direct bearing upon the principles of life insurance.

This study is a very valuable contribution to vital statistics and social economy.

MALZBERG.

Chemistry and Medicine. Edited by Julius Stieglitz. The Chemical Foundation, Inc., New York.

This volume is an admirable description of those researches primarily chemical in nature, which, in our own generation have resulted in ridding mankind of diseases which had formerly plagued the human race for centuries. Other diseases, particularly dangerous to infancy and childhood have been rendered largely innocuous by the process of immunization. The result of these contributions to preventive medicine has been an astonishing increase in the expectation of life at birth—an increase probably exceeding that in the entire preceding history of medicine.

Such fundamental changes with respect to health and disease have affected our very outlook upon life. No one is therefore truly educated who is unaware of the nature of these contributions and without knowledge of the personalities of the men who made these medical advances possible.

In this closely packed volume of over 700 pages, we find authoritative explanations of the contributions of chemistry to our knowledge of the various life functions. As is fitting, the volume begins with an explanation of the modern theory of heredity and development, with special reference to the work of the Mendelians. We then read about the human body as a machine. This is followed by a discussion of vitamins and the conquest of dietary diseases. That interesting phase of modern medicine which deals with the internal secretions is dealt with at length by Professors Abel, Stockard, Macleod and others. The germ theory of disease and its applications in the treatment of malaria, amebic dysentery, leprosy, hookworm, syphilis and tuberculous, are explained in detail. Closely associated with this phase of medicine is the public health movement—the safeguarding of water and food, the disposal of sewage, etc. And finally, there is the no less useful contribution represented by the alleviation of suffering. How much of modern surgery do we not owe to the use of local and general anesthesia?

This volume was made possible through the generosity of Mr .and Mrs. Francis B. Garvan, and is published without profit by the Chemical Foundation. The foreword says that "the book is dedicated to the protection of children and adults against avoidable disease and death." Mr. and Mrs. Garvan suffered the tragic loss of a young daughter from a disease against which medical skill was helpless. It is their hope that encouragement of chemical research may make it possible for others to avoid such a harrowing experience. Surely the triumphant history of chemistry gives us the right to look forward to the fulfillment of such a hope.

MALZBERG.

Mental Hygiene and Social Work. By PORTER R. LEE and MARION E. KENWORTHY, M. D. The Commonwealth Fund. Division of Publications, New York.

In 1917, the New York School of Social Work organized courses in mental hygiene under the direction of Dr. Bernard Glueck. The courses met with an instant response from students. It was soon found, however, that the opportunities for supervised field work in this specialty were limited. In 1920, therefore, the school appealed to the Commonwealth Fund for financial support of a project the purpose of which was to study and treat problem cases arising among selected groups of school children, and at the same time to make possible the adequate training of psychiatric social workers.

The plan as ultimately developed consisted in the organization of a children's clinic which was to be a part of the New York School of Social Work. For a period of five years, the clinic was to receive selected children from certain public schools, and to cooperate with the schools through the instrumentality of visiting teachers who were to be provided by the Public Education Association of New York. At the same time, by a system of fellowships made possible by the Commonwealth Fund, the clinic, known as the Bureau of Child Guidance, was to provide specialized training in psychiatric social work to teachers, probation officers and other social workers enrolled at the school.

Some of the activities of the clinic have been dealt with in earlier volumes which have been reviewed in preceding numbers of THE PSYCHIATRIC QUARTERLY. The present volume is a description of the technique employed by the clinic in the treatment of the problem children (and problem parents), and of the organization of the courses and field work utilized in the training of the workers.

The first problem has received considerable attention in recent years and it can therefore be said that nothing essentially new is added in the present discussion. Nevertheless this section is worth reading if only for the sake of the clear exposition of principles. By a judicious selection of cases, we see how it was possible to alter personality traits in certain cases. We see the problems created by the reciprocal relations of parent and child. We are then shown how to utilize to the best advantage the opportunities for guidance possessed by every family. Most of the advice appears at first glance to be no more than ordinary common sense. But, as Huxley once said in another connection, it is *refined* common sense. It is surprising how often one discovers parents who are neither prepared nor willing to apply such common sense.

The authors have made an earnest attempt to evaluate the results of the five-year program. They appear to be very moderate in their claims and

make no undue attempt to explain away the fact of failure where such exists. The objective appraisal of the results of social work is assuming great importance. Gone is the day when belief in one's program is sufficient justification of its result. As in the wider field of general medicine, we must know the outcome of varying types of procedure. Chapter V, which deals with the results of the clinical activities is therefore an important contribution to the problem of the objective appraisal of a social program.

The second half of the volume is a detailed description of the several courses in mental hygiene developed at the School of Social Work, and of the methods of training the student in the field. The demand for psychiatric social work is rapidly increasing and the supply must come primarily from professional schools of social work. There are now a great number of such schools throughout the country, and they will unquestionably find the discussion of training an invaluable source of guidance in the organization of their curruculum, especially in the difficult art of harmonizing theory with practice.

MALZBERG.

Studies in Ethics for Nurses. A Text-Book by CHARLOTTE A. AIKENS. Third edition, thoroughly revised. 12 mo. of 390 pages. W. B. Saunders Company, 1930. Cloth, $2.50.

Previous editions have been revised and reprinted many times.. The present (3rd) edition, is enlarged by the opening chapter on The Evolution of Nursing, a brief summary of the history of nursing from the earliest times to the present with special emphasis placed upon the influence of Florence Nightingale.

The general purpose of the volume is to develop the principles of ethics as applied to the field of nursing, with particular reference to the student nurse. The book is divided into three sections. Part I considers the qualifications and qualities necessary for the student nurse of the ideal type. Part II continues along the same lines but takes up situations and problems arising during the close of the period of training school life. The third part has to do with the graduate, either as head nurse or on private duty.

The author has "left no stone unturned," urges her readers to "hold fast to that which is good," presents some concrete and practical problems that, thoroughly studied and worked out, should teach the student to become better not only technically but spiritually. Each chapter is closed by a series of questions and problems.

It is a splendid volume, as is recognized from the number of printings and will no doubt continue to lead in its particular field.

GRAY.

The Care of the Child. By ALTON GOLDBLOOM, M. D. 240 pages. Longmans, Green & Co., New York.

Due, partly, to the author's having noted over a period of two years, the types of questions asked by mothers, this book is an excellent "guide for perplexed mothers," as it deals with practically every phase of child care. The presentation is simple enough for the average mother. The author aims to dispel many "old-fashioned" ideas in regard to children and makes an effort to present the ideas of the newer psychology, when discussing habit training. However, in this discussion of causative factors in enuresis, he failed to consider the psychogenic. One might also take issue with his statement that masturbation "if allowed to go on for too long a time—may lead to nervous instability and symptoms of physical fatigue."

The problems of feeding, which seem to give mothers greatest concern, are very clearly explained, as are the methods of early habit training. The reviewer would not hesitate to recommend this book, not only to mothers, but to all who are interested in the child.

CRIMMINS-STEIN.

Child Care and Training. By MARION L. FAEGRE and JOHN E. ANDERSON. The University of Minnesota Press. 274 pages. Price $2.00.

This very excellent, practical and concise book has grown out of the extension courses and study groups offered by the Institute of Child Welfare of the University of Minnesota, organized in 1925 to study the development of children and to bring to parents the information thus obtained. The authors are trained specialists in the study of children and are parents themselves. Their attitudes are based on the modern conceptions of the child. At the end of each chapter, there are a number of questions for the reader to ponder over, and a bibliography which is all inclusive. The physical aspects of child development occupy only the first 59 pages, the rest being devoted to mental and emotional growth. The authors stress early physical care of a preventive nature, and also insist upon the early formation of good habits, psychologically, as laying the basis for mentally healthy adulthood. There are useful lists of children's books, games, dances and victrola records. What this book lacks in detail in some portions, it makes up in scope. It is simple enough for the average mother to whom it will appeal through its "common sense," and especially "to those who see that merely becoming a father or mother does not bring the knowledge necessary to be a good parent."

CRIMMINS-STEIN.

The Medical Department of the United States Army in the World War. Volume X. Neuropsychiatry. U. S. Government Printing Office, Washington.

This volume constitutes an important addition to the history of the medical activities of the United States during the World War. It describes in detail the preparations for the weeding out of mental misfits from the army, and the organization of hospital facilities for the treatment of mental and nervous cases arising from the conduct of the war.

It is well known that war conditions exercise a special influence upon the incidence of mental disorders. Army rates are always high, because psychoneurotics adjust themselves with difficulty to army discipline. The World War added special hazards in the shape of high explosives, tanks and prolonged exposure to trench warfare, all of which created new types of war neuroses.

The general reader will find a wealth of material relating to the incidence and types of mental disorders discovered in the army. About 3,500,000 men underwent special psychiatric examinations. The statistical analysis disclosed that about 20 out of every 1,000 examined had some mental or nervous disease or defect. Detailed analysis of these cases was made with respect to such factors as state of origin, age, education, etc. Of special interest is the discussion of race. An unparalleled opportunity was afforded for the study of some of the important anthropo-sociological problems in the United States. Unfortunately, comparative data for the population as a whole, is lacking. Hence many of the conclusions drawn with respect to racial differences may be legitimately challenged.

Specialists will be interested in the description of the organization of the psychiatric services. Even before the United States entered the great conflict, the results of modern warfare had been studied in Canada, England and France. A program had therefore been devised in anticipation of our eventual participation in the war. The National Committee for Mental Hygiene played a leading part in these preliminary activities, and was vigorous in organizing courses in medical schools and hospitals where the needed personnel could be quickly trained.

The experience of the allies had shown the necessity of mental fitness in the conduct of modern war, and consequently an important part of the preliminary work consisted in the search for those who were unfit for such service. Equally important, of course, was the husbanding of military strength by the prompt treatment of mental and nervous disorders among the combat units. The volume is therefore broadly divided into two appropriate sections—one dealing with the psychiatric activities among the home forces, the other describing in great detail the organization among the expe-

ditionary forces. The historical and psychiatric information packed into these two sections will form a permanent record, possessing great utilitarian value to the army. It will prove of equal value to all future students of the conduct of war.

MALZBERG.

A Text-Book of Materia Medica for Nurses. Including Therapeutics and Toxicology. By GEORGE P. PAUL, M. D., D. P. H. Sixth edition, thoroughly revised. 12 mo. of 356 pages. W. B. Saunders Company, 1930. Cloth, $1.75.

In this edition one notes that the text has been carefully revised and useful additions included which materially increase its value. For instance, in Part I, "The Prescription" has been analyzed, acquainting the nurse with the essentials and methods of writing prescriptions. A list of common abbreviations is employed which makes clearer the reading of the prescription. In Part VI, a list of chemical formulae is given.

The text is divided into six parts. The first considers definitions useful to the student nurse and the classification, preparation, action and administration of drugs. Part II takes up each drug separately, listed alphabetically, as the author believes this a better method than to classify them according to their action. In this section we find emphasis placed on the pre-toxic signs, careful attention to which will aid the nurse in preventing many cases of drug poisoning. Parts III and IV deal with drugs of minor importance and the newer medicinal agents. Part V discusses under the caption of Practical Therapeutics many useful subjects, some not so closely connected with drugs, as hydrotherapy, diet lists, massage, etc. In the concluding section are found miscellaneous tables of weights and measures, solution and drug dosage tables, etc. Also we find abstracts of laws relating to the registration of nurses in New York State, the regulations in reference to opium and coca leaves, and the Federal laws relating to the use of intoxicating liquors.

The book as a whole will be found of great practical help to the student nurse. It is easy to read and could be read by the graduate nurse with profit.

GRAY.

DR. HUGH S. GREGORY APPOINTED SUPERINTENDENT OF NEWARK STATE SCHOOL

Dr. Hugh S. Gregory, pathologist of the Binghamton State Hospital, was appointed by Commissioner Parsons superintendent of the Newark State School, October 6, 1930. He succeeds Dr. Harry A. Steckel, who has become superintendent of the Syracuse State Psychopathic Hospital.

Dr. Gregory was born in Edmeston, N. Y., June 26, 1889. His preliminary education was obtained in the public schools of Albany, N. Y. After a brief experience as a school teacher, he entered the Albany Medical College and was graduated therefrom in 1913 with the degree of Doctor of Medicine. He entered the State hospital service June 2, 1913, as medical interne in the St. Lawrence State Hospital where much of his time was devoted to pathology. He was appointed resident pathologist at Craig Colony, April 1, 1919. After a year of service in that position he was transferred to the Binghamton State Hospital as pathologist. With the exception of a period of 11 months in 1927, he continued in the service of such hospital until the time of his appointment at Newark. While on leave of absence in 1927, he served for six months as medical director of the Steuben Sanitarium at Hornell, N. Y., and for five months as pathologist in the hospital of the Endicott-Johnson Corporation at Endicott, N. Y.

Following Dr. Steckel's appointment as superintendent of the Newark State School in 1929, Dr. Gregory served as clinical director of the Binghamton State Hospital for nearly a year.

Dr. Gregory has been active in the promotion of community mental hygiene and has served as secretary of the Broome County Mental Hygiene Committee and as the head of the Speakers' Bureau of that committee. In this connection he has delivered many addresses on mental hygiene topics.

Dr. Gregory has been particularly interested in research studies in neuropathology and has paid especial attention to the epilepsies. Among his contributions in this field may be mentioned: "The Problem of the Epileptic Insane," "A Modification of the Toluidin Blue Method of Staining Nerve Cells," "Pathological Changes in the Region of the Tuber Cinereum in Idiopathic Epilepsy." He has

HUGH S. GREGORY, M. D.

for some years served as consulting pathologist in the Binghamton City Hospital, the Wilson Memorial Hospital, Johnson City, N. Y., and the Ideal Hospital, Endicott, N. Y. He is a member of the American Psychiatric Association, the State and County Medical Societies, Binghamton Academy of Medicine and Binghamton Psychiatric Society. He is also a member of the Kiwanis Club of Binghamton, N. Y.

On September 16, 1915, Dr. Gregory married Miss Ethel A. Retersdorf, of Utica, N. Y. They have two sons, aged 14 and 12 years.

NOTES

—On August 8, Governor Roosevelt laid the cornerstone of Dormitory Theta of the adult male group at Letchworth Village. When completed this will increase the capacity of the institution to 2,800 beds.

—Dr. Joseph W. Moore, first assistant physician of Matteawan State Hospital, has been appointed a member of the New York State Parole Commission to succeed Judge Irving Goldsmith, who resigned because of ill health.

—Dr. V. C. Branham has resigned from the position of medical director of the New York State Committee on Mental Hygiene to become first deputy commissioner, Department of Correction, State of New York.

—The thirty-first annual meeting of the New York State Conference on Social Work will take place at Elmira, November 18-21. A special round-table session is to be devoted to child welfare, at which the problems of adoption, child-placing, juvenile delinquency, the institutional child, and the school child will be discussed from the mental hygiene point of view.

—The United States Civil Service Commission announces open competitive examinations for the position of social worker (psychiatric), at $2,000 a year and junior social worker, at $1,800 a year. Both positions are in the United States Veterans' Bureau. Applications will be accepted until December 30, 1930.

—The third graduate fortnight of the New York Academy of Medicine will be held in October from the 20th to 31st inclusive. The general subject will be "Medical and Surgical Aspects of Acute Bacterial Infections." An added feature of the sessions will be an exhibit of research material and specimens of infections in the Academy Building.

—Station WMAK of the Buffalo Broadcasting Corporation, has adopted a program for the coming season which embraces a series of health talks by leaders in the medical field. These talks will be given on Mondays, Wednesdays and Fridays. Among the speakers so far announced, are Dr. F. W. Parsons, Commissioner of Mental Hygiene; Dr. Paul B. Brooks, Deputy Commissioner of Health; Dr. Elizabeth M. Gardiner, director of the Division of Maternity, Infancy and Child Hygiene; Dr. H. L. K. Shaw, consulting pediatrician, State Department of Health; Mary G. McCormick, nutritionist; and Florence O. Sherman, assistant medical inspector of schools.

—A division of mental hygiene has been established in the United States Public Health Service. The division is charged with the administration of two hospitals for the treatment of drug addicts, with the rendering of psychiatric service to Federal correctional institutions, and with the conduct of research into the causes, prevalence and prevention of mental diseases.

—The Journal of the American Medical Association reports as a result of its annual survey that there are now 6,665 registered hospitals in the United States. This total is 187 less than that reported in 1929, but the bed capacity of 907,133 represents an increase of 14,199.

—The Wharton Memorial Institute for Mentally Handicapped Children at Port Jefferson, L. I., was dedicated on Sunday afternoon, July 20 by Bishop Thomas E. Molloy. The new structure was made possible by the generosity of William J. Wharton, an old resident of Bay Ridge, who left $250,000 to the Brooklyn Home for Blind, Crippled and Defective Children, in 1928.

—The Committee on Uniform Crime Records of the Association of Chiefs of Police after an exhaustive study, adopted last year a system of statistics of crime. In January, 1930, the committee began publication of monthly reports of offenses known to the police. Announcement is now made that the monthly publication of these uniform crime reports will be assumed by the National Division of Identification and Information, Bureau of Investigation of the United States Department of Justice.

—General Frank T. Hines, who had been director of the United States Veterans' Bureau for seven years, was appointed administrator of Veterans' Affairs, and took the oath of office on July 22, 1930. Colonel George E. Ijams was named acting director of the Veterans' Bureau, Veterans' Administration on July 23. The appointment was made permanent on September 19. Dr. Charles M. Griffith was appointed medical director, United States Veterans' Bureau on September 16.

—The Interstate Post-Graduate Medical Association of North America announces an international assembly to be held in Minneapolis, October 20-24, inclusive. Dr. William D. Haggard of Nashville, Tennessee, is president of the association. Dr. George W. Crile of Cleveland is chairman of the Program Committee. A large list of speakers is announced. Of special interest to psychiatrists are a paper by Dr. William J. Mayo of Rochester, Minnesota, on the autonomic nervous system in medicine and surgery, and a paper by Dr. William A. White on psychoses of different age periods.

—On July 14, Governor Roosevelt and a commission comprising leaders in the medical field of the State, met in conference and formulated preliminary plans for the development of a ten-year health program. The plans tentatively adopted are designed to prevent any overlapping or duplication of efforts. Governor Roosevelt announced at the conference that the health program formulated 17 years ago by the late Dr. Herman N. Biggs, then State health commissioner, has been about rounded out. Dr. Frederick W. Parsons, Commissioner of Mental Hygiene, Dr. Thomas Parran, Jr., State Commissioner of Health, Dr. Charles H. Johnson, Commissioner of Social Welfare, and other representatives of interested State departments attended the conference.

—A Royal Commission was appointed by the Ontario Government in 1929 to investigate the public general hospitals of Ontario, the private hospitals, public and private sanatoria, hospitals for the insane and the mentally defective, the penal and correctional institutions, and agencies for the care of children. The commission has recently presented its report, which is described as the most comprehensive and important ever presented to a government in Canada on the subject of public welfare. The jails in particular were the subject of a scathing attack. Expenditures amounting to a total of $20,000,000 were recommended, of which $3,350,000 are for a new mental hospital, $830,000 for the enlargement of the hospital for defective children, $400,000 for the hospital for epilepties, and $300,000 for the criminal insane.

—The new wing for psychopathic cases at Grasslands Hospital, Westchester County, was opened on August 10. It is a three-story building with 82 beds in eight wards, and is provided with a silent signal system worked by lights, a food tunnel for passage of electrically heated conveyers from the central kitchen and a pneumatic tube system for transmission of medical records and mail. There is a small gymnasium and two fenced-in recreation yards. Dr. George J. Werner, Commissioner of Public Welfare for Westchester County, said that the new wing would provide for Westchester's psychopathic cases for some time to come and would do away with the necessity of maintaining waiting lists. According to Commissioner Werner the 48 communities in the county sent in 584 patients last year, of whom 363 were native-born and 221 foreign-born. More than half the total were returned to their families and to productive pursuits and only 192 were committed to the Hudson River State Hospital for permanent care, while the others went to colonies for the epileptic or feebleminded.

—Dr. George L. Wallace, superintendent of the Wrentham State School for Mental Defectives, at Wrentham, Mass., died suddenly on July 3, 1930, from angina pectoris. Dr. Wallace was born in 1872 in Nova Scotia. He graduated from the Medical Department of the University of Maryland in 1898. He was married in 1900 to Sarah J. Forster of Waltham, Mass. He served as an assistant to Dr. Walter E. Fernald at the Massachusetts School for Feebleminded at Waverly, Mass., from 1898 to 1906. He was an apt pupil and early displayed his unusual ability in the work with mental defect under the leadership of Dr. Fernald. In 1906 he was appointed to the position of superintendent of the new Wrentham State School for Mental Defectives. He went to Wrentham and became responsible for the entire development of what is undoubtedly the outstanding institution of its kind in this country.

Dr. Wallace was a member of several psychiatric societies and was twice president of the American Association for the Study of the Feebleminded, the last time in 1930, when the association formed a part of the First International Congress on Mental Hygiene and met in Washington, D. C. He was the author of several articles on mental defect, the subject matter of these articles demonstrating the breadth of his interest. His publications include studies of personality, the community aspect of the problem of mental defect with reference to public schools, social control and crime. Two of his publications are especially outstanding; one of these deals with the planning and constructing of an institution for the feebleminded and shows the remarkable grasp he had of all details which make for a more efficient and smoother operation of such an institution, while the other article deals with the very important problem of personnel.

By his death the State of Massachusetts, as well as the country at large, loses a leader. It can be said without question that in him was found the happy combination of a remarkable executive with an interest in the scientific aspect of the problem, and the finest type of human sympathy toward the children in the school, his employees and his staff.

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